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ABSTRACT

The first of a two-volume report discusses building laws and construction code provisions for the physically handicapped under Public Law 90-480 within New York city and state. An initial section presents excerpts and explanations of Federal laws along with the specifications of the American National Standards Institute for making buildings accessible to, and usable by, the physically handicapped. Also considered are specifications of the Building Code of the City of New York and New York state laws. Appended information covers explanations of state laws and regulations dealing with multiple dwellings and general building construction. (CI)

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BARRIER-FREE DESIGN:

THE LAW

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

Volume I

1976

EC113679

Dedicated to the memory of
our friend, co-worker and Associate Director

JOE (JOSEPH L.) MANDELLA

His personal dedication to the concept of
Barrier Free Design has given
us a path to follow.

FOREWORD

Recent years have seen a significant advance in federal, state, and local legislation which mandates accessibility for the physically handicapped in new and existing buildings. The enforcement of these laws demands a close scrutiny by the individuals and consumer groups for whom they are intended. Consequently, this two-volume publication, produced by the Eastern Paralyzed Veterans Association, provides explanation and illustration of building laws and construction code provisions for the physically handicapped under Public Law 90-480, within the city of New York, and in the states of New York, New Jersey, Connecticut and Pennsylvania.

This document is not intended primarily for physically handicapped individuals and groups; rather, it is directed toward architects and engineers involved with building design, and building officials and inspectors responsible for code implementation and enforcement. The purpose is to encourage compliance with building code rules for the handicapped by simplified explanation, preferred design recommendation, and interpretation when necessary. Also, this volume is designed for updating compatibility as amendments are promulgated within the jurisdictions mentioned above. Quite incidentally, it affords those who use it a basis of comparison with five separate sets of building code provisions for the physically handicapped.

The Eastern Paralyzed Veterans Association is well qualified to carry out the service embodied in this document. Eastern Paralyzed Veterans Association is a non-profit, non-sectarian, interracial organization of veterans who have incurred an injury or disease of the spinal cord resulting in permanent paralysis and lifelong confinement to a wheelchair. While EPVA's primary goal is service to its members, the organization is also deeply committed to service to the community, disabled and non-disabled alike. It was precisely this committment which inspired EPVA representatives to become involved as consultants in the law-making process which produced many of the provisions discussed herein. Since our expertise in building design for the physically handicapped helped to bring about a good number of these rules, EPVA feels a deep responsibility to see to it that their enforcement is achieved with complete consistency.

Several terms used to describe the scope of this volume need further clarification. To simplify provisions for the physically handicapped in laws and building codes, it is often necessary to extract such rules from lengthy legal documents or implementing regulations. In the pages which follow, we discuss initially the legal statutes which mandate facilities for the physically handicapped in building construction. This is followed by a close look at the regulations set forth to implement such laws. We have retained completely the precise wording of laws, regulations, and code provisions. Our own additions for the purpose of simplification include concise explanation of laws and provisions which are vague or difficultly worded; the use of tables and illustrations to point out minimum requirements; recommendations to encourage maximum accessibility and usability of facilities; and clarification of laws and regulations which are more or less restrictive depending on the jurisdiction involved.

We must also qualify the interpretations we suggest within this publication. We have not attempted to find a law or provision where one does not exist, nor to interpret existing laws solely in the favor of physically handicapped citizens. Frequently, the laws which affect facilities for the disabled in buildings depend on which level of government constructs, alters, leases, or finances the building itself, or on whether or not the structure is considered a "public" building; hence, our own interpretations are directed primarily to separating the proper laws and provisions under which a given type of building is constructed.

Also, the Eastern Paralyzed Veterans Association views this publication as the first step in a total effort to explain all laws in the jurisdictions mentioned above which have a bearing on the mobility of the physically handicapped. For instance, the third volume of Barrier-Free Design: The Law will clarify laws and regulations involving both public and private transportation for the disabled. We also intend to update this and future volumes as new laws are passed and corresponding regulations are issued. Supplements and page inserts will be forwarded from time to time to all individuals and agencies involved in building construction who use this volume. This periodic updating will give those concerned with building law and code enforcement an up-to-the-moment reference guide of provisions for the physically handicapped.

To our knowledge, only one state in this country has published a simplified, illustrated version of building law provisions for the disabled; with this volume, the Eastern Paralyzed Veterans Association offers this service for one city and four states. We sincerely urge those who use this document to compare and refer to the laws established by other states and municipalities presented herein. Such an effort can lead ultimately to improved design, safety, and construction of facilities for the physically handicapped in all buildings. We believe that this publication will assist greatly in the planning of facilities and in the compliance with building code provisions for the disabled.

Architectural Barriers Act of 1968

Public Law 90-480

August 12, 1968

AN ACT

To insure that certain buildings financed with Federal funds are so designed and constructed as to be accessible to the physically handicapped.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, as used in this Act, the term "building" means any building or facility (other than (a) a privately owned residential structure and (b) any building or facility on a military installation designed and constructed primarily for use by able bodied military personnel) the intended use for which either will require that such building or facility be accessible to the public, or may result in the employment or residence therein of physically handicapped persons, which building or facility is ---

(1) to be constructed or altered by or on behalf of the United States;

(2) to be leased in whole or in part by the United States after the date of enactment of this Act after construction or alteration in accordance with plans and specifications of the United States; or

(3) to be financed in whole or in part by a grant or a loan made by the United States after the date of enactment of this Act if such building or facility is subject to standards for design, construction, or alteration issued under authority of the law authorizing such grant or loan.

SEC. 2. The Administrator of General Services, in consultation with the Secretary of Health, Education, and Welfare, is authorized to prescribe such standards for the design, construction, and alteration of buildings (other than residential structures subject to this Act and buildings, structures, and facilities of the Department of Defense subject to this Act) as may be necessary to insure that physically handicapped persons will have ready access to, and use of, such buildings.

SEC. 3. The Secretary of Housing and Urban Development, in consultation with the Secretary of Health, Education, and Welfare, is authorized to prescribe such standards for the design, construction, and alteration of buildings which are residential structures subject to this Act as may be necessary to insure that physically handicapped persons will have ready access to, and use of, such buildings.

SEC. 4. The Secretary of Defense, in consultation with the Secretary of Health, Education, and Welfare, is authorized to prescribe such standards for the design, construction, and alteration of buildings, structures, and facilities of the Department of Defense subject to this Act as may be necessary to insure that physically handicapped persons will have access to, and use of such buildings.

SEC. 5. Every building designed, constructed, or altered after the effective date of a standard issued under this Act which is applicable to such building, shall be designed, constructed, or altered in accordance with such standard.

SEC. 6. The administrator of General Services, with respect to standards issued under section 2 of this Act, and the Secretary of Housing and Urban Development, with respect to standards issued under section 3 of this Act, and the Secretary of Defense with respect to standards issued under section 4 of this Act, is authorized ---

(1) to modify or waive any such standards, on a case-by-case basis, upon application made by the head of the department, agency, or instrumentality of the United States concerned, and upon a determination by the Administrator or Secretary, as the case may be, that such modification or waiver is clearly necessary, and

(2) to conduct such surveys and investigations as he deems necessary to insure compliance with such standards.

Public Law 91-205

March 5, 1970

AN ACT

To amend the Act of August 12, 1968, to insure that certain facilities constructed under authority of Federal law are designed and constructed to be accessible to the physically handicapped.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the first section of the Act entitled "An Act to insure that certain buildings financed with Federal funds are so designed and constructed as to be accessible to the physically handicapped", approved August 12, 1968 (42 U.S.C. 4151), is amended –

(1) by striking out "or" at the end of paragraph (2);

(2) by striking out the period at the end of paragraph (3) and inserting in lieu thereof: ";or"; and

(3) by adding at the end thereof the following:

(4) to be constructed under authority of the National Capital Transportation Act of 1960, the National Capital Transportation Act of 1965, or title III of the Washington Metropolitan Area Transit Regulation Compact.

Public Buildings Cooperative Use Act of 1976

Public Law 94–541

October 18, 1976

AN ACT

To amend the Public Buildings Act of 1959 in order to preserve buildings of historical or architectural significance through their use for Federal public building purposes, and to amend the Act of August 12, 1968, relating to the accessibility of certain buildings to the physically handicapped.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

TITLE II

Sec. 201. The Act entitled "An Act to insure that certain buildings financed with Federal funds are so designed and constructed as to be accessible to the physically handicapped", approved August 12, 1968 (42 U.S.C. 4151–4156), is amended as follows:

(1) The first section is amended by inserting after "structure" the following: "not leased by the Government for subsidized housing programs"; and by striking out in paragraph (2) the following: "after construction or alteration in accordance with plans and specifications of the United States".

(2) Section 2 is amended–

(A) by striking out "is authorized to prescribe such" and inserting in lieu thereof "shall prescribe";

(B) by striking out "as may be necessary to insure" and inserting in lieu thereof "to insure whenever possible"; and

(C) by inserting immediately after "Department of Defense" the following: "and of the United States Postal Service".

(3) Section 3 is amended–

(A) by striking out "is authorized to prescribe such" and inserting in lieu thereof "shall prescribe"; and

(B) by striking out "as may be necessary to insure" and inserting in lieu thereof "to insure whenever possible".

(4) Section 4 is amended–

(A) by striking out "is authorized to prescribe such" and inserting in lieu thereof "shall prescribe"; and

(B) by striking out "as may be necessary to insure" and inserting in lieu thereof "to insure whenever possible".

(5) Immediately after section 4 insert the following new section:

"Sec. 4a. The United States Postal Service, in consultation with the Secretary of Health, Education, and Welfare, shall prescribe such standards for the design, construction, and alteration of its buildings to insure whenever possible that physically handicapped persons will have ready access to, and use of, such buildings.".

(6) Section 6 is amended—

(A) by inserting immediately after "section 4 of this Act," the following: "and the United States Postal Service with respect to standards issued under section 4a of this Act";

(B) by striking out "is authorized";

(C) by inserting immediately after "(1)" the following: "is authorized"; and

(D) by striking out all that follows "(2)" and inserting in lieu thereof " shall establish a system of continuing surveys and investigations to insure compliance with such standards.".

(7) By adding at the end thereof the following new section:

"Sec. 7.(a) The Administrator of General Services shall report to Congress during the first week of January of each year on his activities and those of other departments, agencies, and instrumentalities of the Federal Government under this Act during the preceding fiscal year including, but not limited to, standards issued, revised, amended or repealed under this Act and all case-by-case modifications, and waivers of such standards during such year.

"(b) The Architectural and Transportation Barriers Compliance Board established by section 502 of the Rehabilitation Act of 1973 (Public Law 93-112) shall report to the Public Works and Transportation Committee of the House of Representatives and the Public Works Committee of the Senate during the first week of January of each year on its activities and actions to insure compliance with the standards prescribed under this Act.".

Sec. 202. The amendment made by paragraph (1) of section 201 of this Act shall not apply to any lease entered into before January 1, 1977. It shall apply to every lease entered into on or after January 1, 1977, including any renewal of a lease entered into before such date which renewal is on or after such date.

Sec. 203. Section 410(b) of Title 39, United States Code, is amended by adding at the end thereof the following:

"(8) The provisions of the Act of August 12, 1968 (42 U.S.C. 4151—4156.".

Explanation: Title II of Public Law 94-541 brings buildings and facilities under the jurisdiction of the U.S. Postal Service into the realm of compliance with PL 90-480. Moreover, PL 94-541 now makes it obligatory rather than optional, for the Administrator of GSA, the Secretary of HUD, the Secretary of Defense, and the Postal Service to prescribe standards for access and use by disabled. Also, this law now mandates that these Federal department heads must institute ongoing internal Department compliance review systems. This is another provision which was previously only allowed, but now is mandated by law.

ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD

Sec. 502. (a) There is established within the Federal Government the Architectural and Transportation Barriers Compliance Board (hereinafter referred to as the "Board") which shall be composed of the heads of each of the following departments or agencies (or their designees whose positions are Executive Level IV or higher):

(1) Department of Health, Education, and Welfare;
(2) Department of Transportation;
(3) Department of Housing and Urban Development;
(4) Department of Labor;
(5) Department of the Interior;
(6) General Services Administration;
(7) United States Postal Service; and
(8) Veterans' Administration.

(b) It shall be the function of the Board to: (1) insure compliance with the standards prescribed by the General Services Administration, the Department of Defense, and the Department of Housing and Urban Development pursuant to the Architectural Barriers Act of 1968 (Public Law 90-480), as amended by the Act of March 5, 1970 (Public Law 91-205); (2) investigate and examine alternative approaches to the architectural, transportation, and attitudinal barriers confronting handicapped individuals, particularly with respect to public buildings and monuments, parks and parklands, public transportation (including air, water, and surface transportation whether interstate, foreign, intrastate, or local), and residential and institutional housing; (3) determine what measures are being taken by Federal, State, and local governments and by other public or nonprofit agencies to eliminate the barriers described in clause (2) of this subsection; (4) promote the use of the International Accessibility Symbol in all public facilities that are in compliance with the standards prescribed by the Administrator of the General Services Administration, the Secretary of Defense, and the Secretary of Housing and Urban Development pursuant to the Architectural Barriers Act of 1968; (5) make to the President and to Congress reports which shall describe in detail the results to its investigations under clauses (2) and (3) of this subsection; and (6) make to the President and to the Congress such recommendations for legislation and administration as it deems necessary or desirable to eliminate the barriers described in clause (2) of this subsection.

(c) The Board shall also (1) (A) determine how and to what extent transportation barriers impede the mobility of handicapped individuals and aged handicapped individuals and consider ways in which travel expenses in connection with transportation to and from work for handicapped individuals can be met or subsidized when such individuals are unable to use mass transit systems or need special equipment in private transportation, and (B) consider the housing needs of handicapped individuals; (2) determine what measures are being taken, especially by public and other nonprofit agencies and groups having an interest in and a capacity to deal with such problems, (A) to eliminate barriers from public transportation systems (including vehicles used in such systems), and to prevent their incorporation in new or expanded transportation systems and (B) to make housing available and accessible to handicapped individuals or to meet sheltered housing needs; and (3) prepare plans and proposals for such further actions as may be necessary to the goals of adequate transportation and housing for handicapped individuals, including proposals for bringing together in a cooperative effort, agencies, organizations, and groups already working toward such goals or whose cooperation is essential to effective and comprehensive action.

(d) In carrying out its functions under this section, the Board shall conduct investigations, hold public hearings, and issue such orders as it deems necessary to insure compliance with the provisions of the Acts cited in subsection (b). The provisions of subchapter II of chapter 5 and chapter 7 of title 5, United States Code, shall apply to procedures under this section, and an order of compliance issued by the Board shall be a final order for purposes of judicial review.

(e) The Board is authorized to appoint as many hearing examiners as are necessary for proceedings required to be conducted under this section. The provisions applicable to hearing examiners appointed under section 3105 of title 5, United States Code, shall apply to hearing examiners appointed under this subsection.

(f) The departments or agencies specified in subsection (a) of this section shall make available to the Board such technical, administrative, or other assistance as it may require to carry out its functions under this section, and the Board may appoint such other advisers, technical experts, and consultant as it deems necessary to assist it in carrying out its functions under this section. Special advisory and technical experts and consultants appointed pursuant to this subsection shall, while performing

their functions under this section, be entitled to receive compensation at rates fixed by the Secretary, but not exceeding the daily pay rate, for a person employed as a GS-18 under section 5332 of title 45, United States Code, including traveltime, and while serving away from their homes or regular places of business they may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of such title 5 for persons in the Government service employed intermittently.

(g) The Board shall, at the end of each fiscal year, report its activities during the preceding fiscal year to the Congress. Such report shall include an assessment of the extent of compliance with the Acts cited in subsection (b) of this section, along with a description and analysis of investigations made and actions taken by the Board, and the reports and recommendations described in clauses (5) and (6) of subsection (b) of this section. The Board shall prepare two final reports of its activities under subsection (c). One such report shall be on its activities in the field of transportation barriers to handicapped individuals, and the other such report shall be on its activities in the field of the housing needs of handicapped individuals. The Board shall, prior to January 1, 1975, submit each such report, together with its recommendations, to the President and the Congress. The Board shall also prepare for such submission an interim report of its activities in each such field within 18 months after the date of enactment of this Act.

(h) There are authorized to be appropriated for the purpose of carrying out the duties and functions of the Board under this section $1,000,000 each for the fiscal years ending June 30, 1974, and June 30, 1975.

Sec. 100. This title shall be known as the "Rehabilitation Act Amendments of 1974.".

EXTENSION OF AUTHORIZATION OF APPROPRIATIONS FOR ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD

Sec. 110. Section 502(h) of such Act is amended by inserting before the period at the end thereof a comma and "and $1,500,000 for the fiscal year ending June 30, 1976".

Sec. 111. (n) (1) Section 502(a) of such Act is amended by redesignating clauses (6), (7), and (8) thereof as clauses (7), (8), and (9), respectively, and by inserting immediately after clause (5) the following new clause:

"(6) Department of Defense;"

(2) Section 502(a) of such Act is further amended by adding at the end thereof the following new sentence: "The Secretary of Health, Education, and Welfare shall be the Chairman of the Board, and the Board shall appoint, upon recommendation of the Secretary, a Consumer Advisory Panel, a majority of the members of which shall be handicapped individuals, to provide guidance, advice, and recommendations to the Board in carrying out its functions.".

(o) (1) Section 502(d) of such Act is amended by striking out "section, the Board" in the first sentence and inserting in lieu thereof "Act, the Board shall, directly or through grants to or contracts with public or private nonprofit organizations, carry out its functions under subsections (b) and (c) of this section, and".

(2) Section 502(d) of such Act is further amended by adding at the end thereof the following new sentences: "Any such order affecting any Federal department, agency, or instrumentality of the United States shall be final and binding on such department, agency, or instrumentality. An order of compliance may include the withholding or suspension of Federal funds with respect to any building found not to be in compliance with standards prescribed pursuant to the Acts cited in subsection (b) of this section.".

(p) Section 502(e) of such Act is amended by adding before the first sentence the following new first sentence: "There shall be appointed by the Board an executive director and such other professional and clerical personnel as are necessary to carry out its functions under this Act.".

(q) Section 502(g) of such Act is amended by striking out in the penultimate sentence "prior to January 1" and inserting in lieu thereof "not later than September 30".

(Editor's Note: In addition, two other provisions of the Rehabilitation Act Amendments of 1974 expand the involvement of the A&TBCB under separate areas of PL 93-112. Section III (k) of PL 93-516 amends Section 304(e) (1) of PL 93-112 concerning special projects. The initial legislation under PL 93-112 mandates technical assistance to rehabilitation facilities and to other facilities under the jurisdiction of the Vocational Rehabilitation program for the purpose of the removal of architectural and transportation barriers. The amendment of PL 93-516 requires that such technical assistance be provided only with the concurrence of the A&TBCB; this should ensure compliance with ANSI 117.1-1961 in such rehabilitation and other installations. Section III (l) of PL 93-516 amends Section 306 (b) of PL 93-112 concerning the general grant and contract requirements as they relate to an application for assistance for a construction project. The amending provisions of PL 93-516 are twofold: it is now required that the plans and specifications of such construction which is assisted by a grant under Section 306 (b) of PL 93-112 have the full concurrence of the A&TBCB; it is further required that this new responsibility of the A&TBCB be extended as well to all general construction project requirements in section 306(b) to an application for any project which involves construction. To our understanding, the A&TBCB must concur with any and all construction under section 306(b) of PL 93-112, whether it be construction of a new facility or alteration, renovation, or remodeling of an existing structure.)

Explanation: Public Laws 90-480 and 91-205

The standard used most frequently to implement Public Law 90-480 and the amending Public Law 91-205, the American National Standard ANSI A117.1-1961 "Specifications for Making Buildings and Facilities Accessible To, And Usable By, The Physically Handicapped," is included for the reader's convenience immediately following this discussion. We are indebted to the American National Standards Institute Inc. for permission to incorporate this valuable document in our publication.

While it would be far easier to take pot shots at the deficiencies within the above legislation, we believe that such an approach is counter-productive. These laws have caused numerous positive changes in attitudes toward, and facilities for, the physically handicapped citizen in this country. Proof of this fact can be found in the numerous pieces of correspondence reproduced in The First Report To The Congress of The United States by The Architectural and Transportation Barriers Compliance Board (November 1974). There is exhibited therein a high degree of sincerity among executive level employees of various Federal agencies to insure compliance with PL 90-480 in building construction within their jurisdiction. Our association, for one, does not wish to detract from these sincere efforts which have resulted clearly in making many Federal facilities more accessible to the physically handicapped. Eastern Paralyzed Veterans Association has definite recommendations for upgrading the above legislation but they are not discussed herein; such ideas must only be presented in the proper forum, to the Congress of the United States of America.

Basically, Public Law 90-480 represents landmark legislation. It removed the inclusion of accessibility for the physically handicapped in Federal buildings from the area of voluntarism to the more narrow stricture of statutory requirement. Its three major areas stipulate the types of buildings to be accessible, the conditions under which building construction must comply with the law, and the designation of architectural standards for implementation of the law. The idea of voluntary compliance with design considerations for the physically handicapped prior to the passage of PL 90-480 must not go unnoticed. Decades before this legislation, many Federal agencies provided accessibility as a mater of course; prominent among these is the Veterans Administration: for instance, most VA Hospitals, regional offices ,and outpatient clinics provide access to, and usability of, facilities for disabled clients. Even today, VA Construction Standard CD-28, in effect since October 1973, incorporates maximum space and design requirements for the physically handicapped. It is an excellent standard.

The first portion of PL 90-480's initial section defines those Federal buildings which are or are not required to be designed and constructed so as to be accessible to the physically handicapped. The law states specifically that only "certain buildings" are involved. Those not included are privately owned residential structures, such as one- and two-family dwellings, and buildings on a military installation constructed primarily for use by able-bodied military personnel. In other words, although the construction of such structures often receives Federal financial assistance -- as in the case of one- and two-family dwellings mortgaged by VA or FHA funds -- they need not conform to the requirements of this law for the physically handicapped.

As defined in the law, those structures which must comply with standards for the physically handicapped include ". . . any building or facility . . . the intended use for which either will require that such building or facility be accessible to the public, or may result in the employment or residence therein of physically handicapped persons (emphasis added) . . ." To expand the first series of words we have stressed, we refer to the A&TBCB First Report to Congress mentioned above. The report states in part that "in establishing the Act it was the intent of Congress that the word 'building' be given the broadest possible interpretation (emphasis added). Only certain military and residential structures were excluded from its provisions. All other Federally assisted buildings and facilities, whether they be small rest stations at public parks or multi-million-

dollar Federal office buildings, must be constructed to provide accessibility to the disabled." Other than those buildings excluded, any and all facilities constructed, altered, leased in whole or in part, or financed in whole or in part by a grant or a loan made by the United States must comply with PL 90-480 standards for the physically handicapped.

This interpretation must also extend to the second portion of the law we have emphasized – that the term "building" shall include those structures which may result in the residence therein of the physically handicapped. We believe this means that any and all multiple dwelling structures (those designed for occupancy by three or more families) which are constructed, altered, leased or financed with Federal assistance should comply with PL 90-480. Although such buildings may be privately owned, they are publically financed and they should be classified as "public" buildings with dwelling units for the physically handicapped. Since ANSI 117.1-1961 is not specific about the number of units for the disabled, we recommend a minimum of 2 apartments for the disabled or 4% of the total number of units in a publically-financed multiple dwelling building.

The second portion of Section 1 of PL 90-480 promulgates the conditions under which Federal agencies having construction authority, leasing authority, and authority to provide construction grants and loans must comply with the law. Any building constructed or altered by or on behalf of the United States after August 12, 1968 must provide facilities for the disabled. This wording is not specific as to the extent of alterations where facilities for the disabled are required. We recommend that no matter what the extent of alterations to Federal facilities, accessibility for the handicapped should be considered. The statutes concerning both the leasing and the financing by grant or loan by the United States have succeeded to an extent in eliminating barriers to the handicapped: but in both instances, the wording of the law allows many exemptions from compliance. If a building leased by the United States has not been constructed or altered "in accordance with plans and specifications of the United States," compliance with the law is not mandatory. And, if a building financed by a grant or loan made by the United States is not "subject to standards for design, construction, or alteration issued under authority of the law authorizing such grant or loan, "again compliance is not obligatory. On several different occasions, testimony before Congress has proven two points: that certain Federal agencies have issued regulations stressing that compliance is not necessary under the conditions mentioned above, and that amending legislation is needed desperately to correct this situation so that the broad interpretation of this law intended by Congress is secured. While we agree that such changes must be acted upon, nevertheless the conditions for compliance with PL 90-480 in Federal facilities have opened many new doors to the handicapped since 1968.

Sections 2, 3, 4, and 5 of PL 90-480 designate various authorities for the issuance of design standards to insure access and use of Federal buildings for the physically handicapped. The Secretary of Housing and Urban Development is authorized to prescribe standards for residential structures subject to the law, and the Secretary of Defense is authorized to promulgate standards for Department of Defense buildings subject to PL 90-480; the Administrator of General Services has the authority to issue standards for all other Federal buildings subject to the law. In issuing design standards for the physically handicapped, each of these three department heads consulted with the Secretary of Health, Education, and Welfare. As previously mentioned, the design standard most commonly used is ANSI 117.1-1961, and the implementation of this criteria in Federally assisted construction has improved accessibility. Yet, some problems remain. There exists in this country what might be termed a proliferation of design standards for the physically handicapped, and this fragmentation has filtered into Federal agencies responsible for compliance with PL 90-480. According to the First Report to Congress of the A&TBCB, for example, certain agencies either issue their own construction standards for the physically handicapped, or employ several standards to achieve compliance. Examples of the former are both the Veterans Administration and United States Postal Service. The later condition exists, for instance, in the Bureau of Reclamation of the Department of Interior: this agency utilizes four different sets of design criteria in construction for the disabled. This lack of one consistent compliance system is widespread. While we

believe that these and other agencies are conscientiously attempting to eliminate barriers to the disabled, and in many cases they are succeeding, we feel strongly that the only proper way to achieve accessibility for all physically disabled is through the use of one standard set of design specifications. Different individuals have differing needs but available experience and technology can produce a standard acceptable to all. This is a goal which can be achieved in a spirit of cooperation.

The final segment of PL 90-480, Section 6, authorizes the Administrator of General Services to waive standards outlined in Sections 2, 3, and 4 on a case-by-case basis if necessary, and to conduct surveys to determine if compliance with standards is being realized. According to the A&TBCB, the waiver clause has been invoked on rare occasions only where compliance would have been nearly impossible to achieve. In our view, the only instances where implementation of the law should be waived is if the alteration to achieve accessibility would make a facility virtually unusable. We can foresee no new construction where a waiver should be issued. Proper design for the disabled from the initial stages should negate completely the eventuality of a waiver request.

Concerning surveys relative to compliance, it is the responsibility of the Administrator of General Services to monitor the activities of most Federal agencies involved with construction of facilities and implementation of ANSI 117.1-1961 in these facilities. Such a survey was undertaken by GSA, according to the First Report to Congress of the A&TBCB. Most agencies reported to GSA that their facilities were in compliance with the law and the ANSI standard. However, GSA took upon itself the responsibility of conducting a review of the survey results received from those agencies under its authority via PL 90-480. The results of GSA's review were quite significant. Many discrepancies were found between the GSA review and the original results submitted by agencies. The overall conclusion was that total compliance with the ANSI standard was not being achieved, and the main reasons put forth for this lack of compliance were loopholes in PL 90-480 itself and misinterpretation of both the law and the standard.

It should also be mentioned that other surveys about the effectiveness of PL 90-480 have been undertaken. Two of these are quite important: one commissioned by Congress and completed by the General Accounting Office, and a second completed by a trio of consumer groups in the State of Iowa (the Iowa Easter Seal Society, the Iowa Chapter of the American Institute of Architects, the State Governor's Committee on Employment of the Handicapped). The GAO study included the inspection of 314 Federally financed buildings or building plans in 66 geographical areas of 35 States and the District of Columbia. All buildings examined were constructed, altered or leased after the passage of PL 90-480. According to the results of this study (GAO Report to Congress dated July 15, 1975), while most buildings were in varying stages of compliance with ANSI 117.1-1961, not one building inspected was completely free of barriers. Major deficiencies included unusable restrooms, elevators and fixture controls; inaccessible parking lots and doorways; and lack of identification of building areas for the physically handicapped.

The Iowa study (Accessibility – The Law and The Reality: A Survey To Test The Application and Effectiveness of Public Law 90-480 in Iowa dated May 4, 1974) arrives at the following general conclusion: that the law "has not met the stated intent of Congress – 'to insure that certain buildings . . . are . . . accessible to the physically handicapped' as it pertains to Iowa." This survey did note improvements in the removal of barriers to the disabled but it emphasized that "too many deficiencies were noted to judge the majority of projects built under the law fully accessible." Among the major barriers noted were inaccessible parking lots, restrooms, water fountains, and public telephones, and a lack of facilities for those with sight handicaps. The Iowa survey also recommended stronger enforcement and administration of PL 90-480, improved design standards to implement the law, and intensive education of Federal agency responsibilities under the law.

The survey results concerning the implementation of PL 90-480 discussed above present some obvious conclusions. There are ambiguities in the law which need clarification; there is a need for an effective statutory enforcement mechanism; there is a need for the standardization of a design criteria for the physically handicapped and a concurrent education of Federal officials involved in its implementation; and there is a crying need for a better set of specifications for building design for the disabled. On this last point, we are encouraged that ANSI 117.1-1961 is being upgraded completely and should be available in the early part of 1977. If disabled consumer groups are satisfied that it meets the need for barrier-free design, we hope this new standard will become an amending statutory requirement to PL 90-480. Considering the relative newness of PL 90-480 and the changes in both agency thinking and building design which it required, many barriers to the disabled have been eliminated in Federal facilities. We believe that little blame can be placed on Federal employees who have attempted to comply with PL 90-480; rather than direct fault toward any individual or group, it must be realized that total barrier-free design in Federally assisted facilities can only be accomplished through more restrictive laws, a more specific design standard, and more stringent compliance measures.

Explanation: Public Laws 93-112 and 93-516

The importance of insuring compliance with Public Laws 90-480 and 91-205 was a prime cause in the passage of Public Laws 93-112 and 93-516. Section 502 of PL 93-112 created the Architectural and Transportation Barriers Compliance Board, and PL 93-516 enlarged its scope and authority substantially. The legislation which formed the Compliance Board became effective on September 26, 1973, and its provisions are spelled out in eight subsections; the amending legislation, PL 93-516, went into effect on December 7, 1974, making additions and changes to five of the eight subsections of PL 93-112. The cumulative effect of both pieces of legislation mandates the composition of the Board, its specific functions, the methods, staffing, and technical assistance necessary to carry out its mandates, a means of reporting its findings and making recommendations for legislative change, and an appropriations clause. Although the true effectiveness of the Compliance Board has been questioned by many individuals and groups from the private sector, EPVA agrees with several Congressional Committee reports compiled prior to the passage of PL 93-516 which emphasized that the Board has the potential to become a major force for positive change in eliminating all barriers to the mobility of the physically handicapped.

The commentary which follows concerning the function of the Board since its inception is based on information received from the November 1974 First Report to Congress, and from correspondence and conversations with Compliance Board staff as of July 1, 1976. It is necessary to date this discussion since several studies conducted by the Board have not been completed or made public as of July 1976.

Section 502 (a) of PL 93-112 mandates the structure of the A&TBCB: it is formed within the Federal government and composed of the heads (or their designees) of nine Federal departments or agencies. The Chairmanship of the Board is held by the Secretary of Health, Education, and Welfare (or his designee). Providing guidance and recommendations to the Board is a Consumer Advisory Panel; a majority of this panel's members are physically handicapped individuals. The Compliance Board itself met on a monthly basis during the formative period of its operation, and now it has settled into a pattern of bi-monthly meetings. In general, their meetings focus on planning and policy which is then implemented by the professional staff of the Board. On the other hand, the Consumer Advisory Panel is only recently formed, and it has convened just once as of July 1, 1976. The differing authorities of the A&TBCB and the CAP are important: CAP acts solely in an advisory capacity; as constituted, it possesses virtually no powers. The A&TBCB, however, has the authority to issue orders of compliance and the ability to withhold funds in cases of non-compliance with PL 90-480.

Sections 502 (b) and (c) of PL 93-112 enumerate the Board's diverse functions. Its primary duty is to insure compliance with standards prescribed under the authority of Public Laws 90-480 and 91-205. According to the Board's First Report to the Congress of the United States, this function was the main emphasis of its activities during its first year of operation. The Board solicited and received reports on the compliance mechanisms at work within each of its member agencies or departments. As mentioned earlier, a majority of agencies use ANSI 117.1-1961 to implement PL 90-480. The specifics of each agency report prove that a certain amount of compliance is being achieved; however, the independent GSA review of these reports contradicts their results and points out widespread misinterpretation of both the statute and the standard. Our general view is that total compliance is not being secured.

As second function of the A&TBCB is to examine alternative approaches to all barriers which confront the physically handicapped, and to determine the methods used by both other levels of government and non-governmental groups to eliminate barriers. This is a monumental undertaking since laws and programs which provide access for the disabled are quite diverse. The tools chosen thus far by the A&TBCB to accomplish these ends are twofold: the use of public hearings and the Board's own investigations, both sanctioned under Section 502 (d) of PL 93-112. An example of the former is the A&TBCB's First Model Hearing conducted on June 20-21, 1974 in San Francisco. Testimony was received from various agencies, consumer groups and individuals involved in barriers removal in the San Francisco Bay area. The Bay Area and Western chapter of the Paralyzed Veterans of America took an active role in these proceedings. Focus was placed on the accessibility features of the Bay Area Rapid Transit System (BART), and on efforts to eliminate barriers in downtown San Francisco. What was learned from this hearing forms part of an A&TBCB investigatory report on Transportation Barriers. This report is completed and will be issued soon pending the approval of the Office of Management and Budget. As an added note, we are hopeful that somewhere in this report the necessity of insuring compliance with both the 1970 amendments to the Urban Mass Transportation Act of 1964 and the 1974 amendments to the Federal Aid Highway Act of 1973 is advocated.

Other investigations concurrent with the mandates of Sections (b) and (c) have been completed. Section (c) of the law, for instance, emphasizes the Board's examination of both transportation and housing needs of the disabled. Apart from its efforts concerning transportation barriers previously mentioned, the Board held another public hearing in Chicago on June 9-10, 1975 directed toward housing needs for the physically handicapped. The results of this hearing are published in a two-volume A&TBCB document, Freedom of Choice: Report To The President and Congress on Housing Needs of Handicapped Individuals, dated October 1975. This study contains many significant proposals which require legislative action. A third investigatory report concerning the accessibility of Outdoor Spaces is completed, approved by OMB, and currently being printed. In connection with this, a third public hearing concerning Recreation and the disabled is scheduled for Boston in October of 1976. Finally, the A&TBCB defeated a proposal to fund a study of Attitudinal Barriers in this country. In our opinion, this action was a serious oversight since we believe that negative attitudes toward this nation's disabled produce barriers of all sorts in the first place.

Further duties of the A&TBCB are promulgated in Sections (b) and (c) of the law. The Board is mandated to promote the International Symbol of Accessibility in public facilities which are in compliance with standards prescribed under PL 90-480. Simply stated, no major effort has begun in this area. The A&TBCB is also directed to report its findings from investigations into barriers to the President and the Congress, and to make recommendations for legislation, administration, plans, and proposals to further eliminate barriers of all types. The Board's First Report to the Congress was submitted in November of 1974; it contained no specific legislative recommendations. Its Second Report to the Congress is currently awaiting OMB approval. To our knowledge, it will contain precise proposals for legislation to improve the mobility of the physically handicapped in all areas listed in Section 502 (b) (2).

Section 502 (d) of PL 93-112 explains how the Board is to carry out its functions. Along with public hearings and its independent investigations into barriers problems and solutions, Section (d) authorizes the Board to issue grants and contracts to public or private non-profit agencies to study those issues mandated in Sections (b) and (c). Several grants have recently been awarded by the Board for this specific purpose. Other provisions of Section (d) give the A&TBCB potential enforcement means. The Board has the authority to issue orders of compliance under PL 90-480 which shall be final and binding, and it has the further power to withhold or suspend Federal funds for building construction which is not in compliance with standards under PL 90-480. The Board has yet to exercise either of these powers; while this is unfortunate, the A&TBCB has recently circulated proposed rules for "Practice and Procedures for Compliance Hearings" (published in the June 10, 1976 issue of the Federal Register). The purpose of these proposed rules is to set up a workable system to adjudicate complaints of alleged non-compliance. We view the establishment of this process as a positive step. In their proposed form, these rules provide for the issuance of final and binding orders of compliance and the witholding of funds if a decision of non-compliance is reached. If these regulations are issued substantially as they are proposed, the A&TBCB will finally become a "Compliance Board" in the true sense of the term.

Section 502 (e) of PL 93-112 concerns the professional staff of the A&TBCB. Currently, the staff includes thirteen (13) full-time employees including an Executive Director with overall administrative responsibilities. His staff is divided into three separate departments to carry out efficiently the policies and decisions of the Board itself. As it should be, the staff of the A&TBCB is located in Washington, D.C. Section (e) further provides for the appointment of hearing examiners for the purpose of conducting proceedings in cases of alleged non-compliance. No hearing examiners have been designated as of July 1, 1976. Most certainly, we expect that once the final regulations for "Practices and Procedures for Compliance Hearings" are issued, the A&TBCB will retain as many hearing examiners as are necessary to deal with the current backlog of complaints. Perhaps, even a regional compliance hearing system may one day be necessary to handle the complaint case load.

Section 502 (f) directs the agencies and departments composing the Board itself to supply full technical assistance in order for the Board to meet its objectives, and it also authorizes the appointment of special technical consultants to assist the A&TBCB's function. To be candid, technical assistance from the Federal agencies involved could be intensified. The private sector seems more inclined and willing to provide such aid. Unfortunately, the hiring of technical advisers has not been achieved either. This situation is directly related to the fiscal restraints imposed on the Board discussed under Section 502 (h).

Section 502 (g) covers the Board's responsibility to report its activities, investigations, actions taken, and the extent of compliance to the Congress at the close of each fiscal year. To our knowledge, the Board has met its requirements in this area. This section also mandates two final reports to be submitted to Congress not later than September 30, 1975 – one in the field of Transportation Barriers to the disabled, and a second on the Housing Needs of handicapped individuals. The report on Housing Needs was submitted on the date specified while the study of Transportation Barriers awaits the approval of OMB prior to printing and public distribution.

The final section of PL 93-112 involves appropriations for its operation. There is a vast difference between a sum designated to be appropriated and the actual monies released. For example, $1.5 million was appropriated for the fiscal year ending June 30, 1976, but funds in the vicinity of $500,000.00 were actually available for the function of the Board and its staff. The same appropriation has been made for the fiscal year ending June 30, 1977, and it is expected again that only about one-third of that amount will be available to the A&TBCB. If the Compliance Board is to become a real force for the removal of all barriers to the mobility of the disabled in this country, it must be fully funded as appropriated by the Congress.

An overview of the operation of the A&TBCB since its creation can be seen as a dichotomy: on the positive side, it is making great efforts in meeting its mandate to investigate and report its findings concerning most barriers to the mobility of the physically handicapped in this country. By no means has the Board been dormant in this area. On the negative side, it has just begun to implement its primary function, to insure complete compliance with Public Laws 90-480 and 91-205. Recent events indicate that the A&TBCB is moving in this direction; the proposed "Practice and Procedures for Compliance Hearings" should provide the system to bring about total compliance. The Board must have a compliance review mechanism that is active and the necessary funds to make the system workable.

In conclusion, the Eastern Paralyzed Veterans Association believes that a very basic constitutional right is involved inextricably with the question of accessibility for the physically handicapped in this country. This principle must be stated clearly. Primarily, a physical disability constitutes a restriction of individual mobility; the rehabilitative process restores such mobility to the physically handicapped. Furthermore, physical movement is absolutely essential in our society. It is the core of every educational, employment, recreational, and social opportunity available to citizens of the United States. Able-bodied Americans, by and large, enjoy such freedom; unfortunately, the physically handicapped do not in many cases. Simply stated, freedom of movement is a basic civil right for all Americans, including the physically handicapped. We believe that this right is guaranteed specifically in the Bill of Rights and elsewhere as well in the Constitution of the United States. We further believe that to construct a building which restricts freedom of movement for the physically handicapped is a violation of basic constitutional rights. This principle extends also to the use of public transportation, housing, and the general environment.

This concept is easily documented. In the opening statement of hearings before the Subcommittee on Investigations and Review of the Committee on Public Works and Transportation conducted in October 1975, concerning the effectiveness of PL 90-480, Congressman James Wright, Chairman of the Subcommittee, stated: "We are talking about otherwise alert, productive citizens who both desire and deserve the right to function (emphasis added) as productive citizens in a highly mobile society. Americans instinctively feel emotion and sympathy for our handicapped citizens. But emotion and sympathy do not provide much assistance to the person in a wheelchair seeking access to his post office, or trying to visit a pigeon-holed local social security office. His plight can be aided, however, by sensible action programs of government, involving the design of buildings and transportation systems."

From the private sector comes a similar statement which supports this philosophy. In an article entitled "The Handicapped Plead for Entrance – Will Anyone Answer?" printed in the Kentucky Law Journal, Professor Alan J. Farber of the Catholic University Law School examines the failure of the Federal government to provide access to Federal buildings for all disabled. Professor Farber states in part that PL 90-480 "does not effectively accomplish that which it protests to do . . . the Act simply does not, in legal or practical effect, insure that physically handicapped persons will have ready access to, and use of (Federal) buildings . . . As the legislative history of the Act implies and as any wheelchair-bound individual will attest, voluntarism in the area of accessibility, as in civil rights issues, is essentially nonexistent (emphasis added)." The physically handicapped in this nation have learned through sometimes bitter experience that voluntarism, emotion, vague policy statements, and sympathy do not produce access on a daily basis. Sensible government action programs are the solution.

It seems appropriate that, in this Bicentennial year, there is a heightened awareness among the nation's physically handicapped that continued lack of accessibility is a grave threat to their "independence," and that their inability to use Federal buildings and facilities constitutes an abridgment of basic civil rights. We at EPVA do not advocate a revolution but we expect that our awareness be understood and acted upon by government officials on all levels.

Like the founding fathers of this country, the physically handicapped must seek freedom. The seventeenth-century Dutch philosopher Spinoza held that freedom consisted of forces arising from within each individual human being; freedom of mobility for this nation's disabled population must arise from society and its government. It is government which must generate a value system of total accessibility. Our leaders must acquire an intellectual and imaginative vision of seeing things whole and clear for the physically handicapped. In turn, the disabled must have faith, that type of faith which emanates from the positive experience acquired since the above laws became effective.

The results of public and private surveys and investigations concerning these laws have yielded both positive and negative conclusions. All such results are based on the experience of the physically handicapped in this country, and in the final analysis, it is precisely this experience which is most meaningful, and from which the knowledge to improve accessibility springs. An obvious case in point is the current update of the ANSI standard. These laws have not only removed barriers but they have provided a basis of experience in the field of barrier-free design. As in scientific inquiry, observation and discovery have enlarged the experience needed to remove barriers. We now have a wider range of facts; consequently, the principles behind the laws must be modified to apply to these facts. What we at EPVA believe to be most encouraging is that this experience is open and public and available to anyone who wishes to learn from it and act upon it. The Congress of the United States can accomplish this. The existing public laws have removed barriers in many areas, but more significantly, they have provided direction to governments on all levels for the achievement of total accessibility.

ANSI
A117.1-1961
(Reaffirmed 1971)

American National Standard Specifications for Making Buildings and Facilities Accessible to, and Usable by, The Physically Handicapped

Secretariat

National Society for Crippled Children and Adults
The President's Committee on Employment of the Physically Handicapped

Approved October 31, 1961

American National Standards Institute, Inc

American National Standard

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THE NATIONAL EASTER SEAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, 2023 WEST OGDEN AVENUE, CHICAGO, ILLINOIS 60612

THE PRESIDENT'S COMMITTEE ON EMPLOYMENT OF THE HANDICAPPED, WASHINGTON, D.C. 20210

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Foreword

(This Foreword is not a part of American Standard Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped, A117.1-1961.)

Approximately one out of seven people in our nation has a permanent physical disability. This segment of our population represents human resources of inestimable value and is of great economic significance to the entire nation.

The most common design and construction of buildings and facilities cause problems for the physically handicapped that lessen the social and economic gains now evident in the rehabilitation of these individuals. These architectural barriers make it very difficult to project the physically handicapped into normal situations of education, recreation, and employment.

In May, 1959, the ASA, acting on the request of The President's Committee on Employment of the Physically Handicapped, called a general conference of those groups vitally interested in the problem. This conference recommended the initiation of a project, and this recommendation was subsequently approved by the Construction Standards Board. The President's Committee on Employment of the Physically Handicapped and the National Society for Crippled Children and Adults were designated as co-sponsors, and the latter agreed to assume the secretariat.

This standard supplements other American Standards relating to various aspects of buildings and facilities. Its specifications, which are the result of extended and careful consideration of available knowledge and experience on this subject, are intended to present minimum requirements. They are recommended for use in the construction of all buildings and facilities and for adoption and enforcement by administrative authorities, so that those individuals with permanent physical disabilities might pursue their interests and aspirations, develop their talents, and exercise their skills.

The ASA Sectional Committee on Facilities in Public Buildings for Persons with Physical Handicaps, A117, which developed this standard, had the following personnel at the time of approval.

LEON CHATELAIN, JR, *Chairman* — T. J. NUGENT, *Secretary*

Organization Represented	*Name of Representative*
AFL-CIO	WALTER MASON
American Foundation for the Blind	ARTHUR VOORHEES
American Hospital Association	MARGARET E. PETERS
American Hotel Association	JAKE FASSETT
American Institute of Architects	CLINTON H. COWGILL F. CUTHBERT SALMON CHRISTINE F. SALMON *(Alt)*
American Municipal Association	BARNET LIEBERMAN LEO GOLDSTEIN *(Alt)*
American Occupational Therapy Association	MARJORIE FISH
American Physical Therapy Association	LUCY BLAIR
American Society of Landscape Architects	CAMPBELL E. MILLER
The American Society of Mechanical Engineers	JOSEPH W. DECEN
American Society of Safety Engineers	THOMAS J. BERK
American Vocational Association	CHARLES W. SYLVESTER, M.D.
Associated General Contractors of America	WILLIAM F. LOTZ BURT L. KNOWLES *(Alt)*
Association of Casualty and Surety Companies	ROBERT HAGOPIAN JAMES C. ROUMAS *(Alt)*
Construction Specifications Institute	EDWIN A. WEED CLEMONS J. POIESZ *(Alt)*
Federal Housing Administration	WILLIAM J. O'CONNOR
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Industrial Home for the Blind	HERBERT RUSALEM, M.D. HAROLD RICHTERMAN *(Alt)*
Industrial Medical Association	KENNETH G. PEACOCK, M.D.
Indoor Sports Clubs, Inc	ARVELLA M. SANDER
Institute for the Crippled and Disabled	ROBERT MCAFEE WALTER S. NEFF, M.D. *(Alt)*

Organization Represented	*Name of Representative*
National Bureau of Standards	*(Representation vacant)*
National Congress of Organizations for the Physically Handicapped	Elmer Josephs
National Council of Churches	Rev. Francis F. Fisher
National Council of Schoolhouse Construction	John L. Cameron E. J. Braun *(Alt)*
National Elevator Manufacturing Industry	D. J. Matheson
National Paraplegia Foundation	Eugene Auryansen
National Rehabilitation Association	Edward Stiles
National Safety Council	Robert L. Jenkins
National Society for Crippled Children and Adults	Leon Chatelain, Jr John B. Kemp D. W. Roberts, M.D. Jayne Shover Theron H. Butterworth *(Alt)*
Paralyzed Veterans of America, Inc	Robert P. Meier Robert Classon *(Alt)*
Paraplegics Manufacturing Company	Dwight D. Guilfoil, Jr Harry Bendsten *(Alt)*
Plumbing Fixture Manufacturers Association	Russell W. Smith
The President's Committee on Employment of the Physically Handicapped	K. Vernon Banta Major General Melvin J. Maas, USMCR (ret)
Society of Industrial Realtors	Frank D. Garibaldi
Telephone Group	J. M. Standring, Jr
United Cerebral Palsy Associations, Inc	Harry Lyons
U. S. Conference of Mayors	Harry R. Beyers
U. S. Department of Health, Education and Welfare	
Bureau of State Services	Howard Spence
Children's Bureau	Clara M. Arrington Georgia Perkins, M.D. *(Alt)*
Division of Accident Prevention	Eugene L. Lehr
Division of Hospital and Medical Facilities	August F. Hoenack Peter N. Jensen *(Alt)*
Office of Education	Romaine P. Mackie
Office of Vocational Rehabilitation	Philip Klieger, M.D.
U. S. Department of Labor	
Bureau of Employment Security	Hendrick D. Mugaas Melvin R. Bergstrom *(Alt)*
Bureau of Labor Standards	Sheldon W. Homan William G. Griffin *(Alt)*
U. S. Veterans Administration	H. D. York
University of Illinois Rehabilitation Center	T. J. Nugent

The personnel of the steering committee is as follows:

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Leon Chatelain, Jr
Clinton H. Cowgill
Philip A. Klieger
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H. Dwight York

and not deviating from the level of the existing ground immediately adjacent.

2.13 Appropriate Number. As used in this text, appropriate number means the number of a specific item that would be necessary, in accord with the purpose and function of a building or facility, to accommodate individuals with specific disabilities in proportion to the anticipated number of individuals with disabilities who would use a particular building or facility.

EXAMPLE: Although these specifications shall apply to all buildings and facilities used by the public, the numerical need for a specific item would differ, for example, between a major transportation terminal, where many individuals with diverse disabilities would be continually coming and going, an office building or factory, where varying numbers of individuals with disabilities of varying manifestations (in many instances, very large numbers) might be employed or have reason for frequent visits, a school or church, where the number of individuals may be fixed and activities more definitive, and the many other buildings and facilities dedicated to specific functions and purposes.

NOTE: Disabilities are specific and where the individual has been properly evaluated and properly oriented and where architectural barriers have been eliminated, a specific disability does not constitute a handicap. It should be emphasized that more and more of those physically disabled are becoming *participants*, rather than spectators, in the fullest meaning of the word.

3. General Principles and Considerations

3.1 Wheelchair Specifications. The collapsible-model wheelchair of tubular metal construction with plastic upholstery for back and seat is most commonly used. The standard model of all manufacturers falls within the following limits, which were used as the basis of consideration:

(1) Length: 42 inches
(2) Width, when open: 25 inches
(3) Height of seat from floor: 19½ inches
(4) Height of armrest from floor: 29 inches
(5) Height of pusher handles (rear) from floor: 36 inches
(6) Width, when collapsed: 11 inches

3.2 The Functioning of a Wheelchair

3.2.1 The fixed turning radius of a standard wheelchair, wheel to wheel, is 18 inches. The fixed turning radius, front structure to rear structure, is 31.5 inches.

3.2.2 The average turning space required (180 and 360 degrees) is 60 x 60 inches.

NOTE: Actually, a turning space that is longer than it is wide, specifically, 63 x 56 inches, is more workable and desirable. In an area with two open ends, such as might be the case in a corridor, a minimum of 54 inches between two walls would permit a 360-degree turn.

3.2.3 A minimum width of 60 inches is required for two individuals in wheelchairs to pass each other.

3.3 The Adult Individual Functioning in a Wheelchair[2]

3.3.1 The average unilateral vertical reach is 60 inches and ranges from 54 inches to 78 inches.

3.3.2 The average horizontal working (table) reach is 30.8 inches and ranges from 28.5 inches to 33.2 inches.

3.3.3 The bilateral horizontal reach, both arms extended to each side, shoulder high, ranges from 54 inches to 71 inches and averages 64.5 inches.

3.3.4 An individual reaching diagonally, as would be required in using a wall-mounted dial telephone or towel dispenser, would make the average reach (on the wall) 48 inches from the floor.

3.4 The Individual Functioning on Crutches[3]

3.4.1 On the average, individuals 5 feet 6 inches tall require an average of 31 inches between crutch tips in the normally accepted gaits.[4]

3.4.2 On the average, individuals 6 feet 0 inches tall require an average of 32.5 inches between crutch tips in the normally accepted gaits.[4]

4. Site Development[5]

4.1 Grading. The grading of ground, even contrary to existing topography, so that it attains a level with a normal entrance will make a facility accessible to individuals with physical disabilities.

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[2] Extremely small, large, strong, or weak and involved individuals could fall outside the ranges in 3.3.1, 3.3.2, 3.3.3, and their reach could differ from the figure given in 3.3.4. However, these reaches were determined using a large number of individuals who were functionally trained, with a wide range in individual size and involvement.

[3] Most individuals ambulating on braces or crutches, or both, or on canes are able to manipulate within the specifications prescribed for wheelchairs, although doors present quite a problem at times. However, attention is called to the fact that a crutch tip extending laterally from an individual is not obvious to others in heavily trafficked areas, certainly not as obvious or protective as a wheelchair and is, therefore, a source of vulnerability.

[4] Some cerebral palsied individuals, and some severe arthritics, would be extreme exceptions to 3.4.1 and 3.4.2.

[5] Site development is the most effective means to resolve the problems created by topography, definitive architectural designs or concepts, water table, existing streets, and atypical problems, singularly or collectively, so that aggress, ingress, and egress to buildings by physically disabled can be facilitated while preserving the desired design and effect of the architecture.

4.2 Walks

4.2.1 Public walks should be at least 48 inches wide and should have a gradient not greater than 5 percent.[6]

4.2.2 Such walks shall be of a continuing common surface, not interrupted by steps or abrupt changes in level.

4.2.3 Wherever walks cross other walks, driveways, or parking lots they should blend to a common level.[7]

NOTE: 4.1 and 4.2, separately or collectively, are greatly aided by terracing, retaining walls, and winding walks allowing for more gradual incline, thereby making almost any building accessible to individuals with permanent physical disabilities, while contributing to its esthetic qualities.

4.2.4 A walk shall have a level platform at the top which is at least 5 feet by 5 feet, if a door swings out onto the platform or toward the walk. This platform shall extend at least 1 foot beyond each side of the doorway.

4.2.5 A walk shall have a level platform at least 3 feet deep and 5 feet wide, if the door does not swing onto the platform or toward the walk. This platform shall extend at least 1 foot beyond each side of the doorway.

4.3 Parking Lots

4.3.1 Spaces that are accessible and approximate to the facility should be set aside and identified for use by individuals with physical disabilities.

4.3.2 A parking space open on one side, allowing room for individuals in wheelchairs or individuals on braces and crutches to get in and out of an automobile onto a level surface, suitable for wheeling and walking, is adequate.

4.3.3 Parking spaces for individuals with physical disabilities when placed between two conventional diagonal or head-on parking spaces should be 12 feet wide.

4.3.4 Care in planning should be exercised so that individuals in wheelchairs and individuals using braces and crutches are not compelled to wheel or walk behind parked cars.

4.3.5 Consideration should be given the distribution of spaces for use by the disabled in accordance with the frequency and persistency of parking needs.

4.3.6 Walks shall be in conformity with 4.2.

5. Buildings

5.1 Ramps with Gradients. Where ramps with gradients are necessary or desired, they shall conform to the following specifications:

5.1.1 A ramp shall not have a slope greater than 1 foot rise in 12 feet, or 8.33 percent, or 4 degrees 50 minutes.

5.1.2 A ramp shall have handrails on at least one side, and preferably two sides, that are 32 inches in height, measured from the surface of the ramp, that are smooth, that extend 1 foot beyond the top and bottom of the ramp, and that otherwise conform with American Standard Safety Code for Floor and Wall Openings, Railings, and Toe Boards, A12.1-1932.

NOTE 1: Where codes specify handrails to be of heights other than 32 inches, it is recommended that two sets of handrails be installed to serve all people. Where major traffic is predominantly children, particularly physically disabled children, extra care should be exercised in the placement of handrails, in accordance with the nature of the facility and the age group or groups being serviced.

NOTE 2: Care should be taken that the extension of the handrail is not in itself a hazard. The extension may be made on the side of a continuing wall.

5.1.3 A ramp shall have a surface that is nonslip.

5.1.4 A ramp shall have a level platform at the top which is at least 5 feet by 5 feet, if a door swings out onto the platform or toward the ramp. This platform shall extend at least 1 foot beyond each side of the doorway.

5.1.5 A ramp shall have a level platform at least 3 feet deep and 5 feet wide, if the door does not swing onto the platform or toward the ramp. This platform shall extend at least 1 foot beyond each side of the doorway.

5.1.6 Each ramp shall have at least 6 feet of straight clearance at the bottom.

5.1.7 Ramps shall have level platforms at 30-foot intervals for purposes of rest and safety and shall have level platforms wherever they turn.

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[6] It is essential that the gradient of walks and driveways be less than that prescribed for ramps, since walks would be void of handrails and curbs and would be considerably longer and more vulnerable to the elements. Walks of near maximum grade and considerable length should have level areas at intervals for purposes of rest and safety. Walks or driveways should have a nonslip surface.

[7] This specification does not require the elimination of curbs, which, particularly if they occur at regular intersections, are a distinct safety feature for all of the handicapped, particularly the blind. The preferred method of meeting the specification is to have the walk incline to the level of the street. However, at principal intersections, it is vitally important that the curb run parallel to the street, up to the point where the walk is inclined, at which point the curb would turn in and gradually meet the level of the walk at its highest point. A less preferred method would be to gradually bring the surface of the driveway or street to the level of the walk. The disadvantage of this method is that a blind person would not know when he has left the protection of a walk and entered the hazards of a street or driveway.

5.2 Entrances

5.2.1 At least one primary entrance to each building shall be usable by individuals in wheelchairs.

NOTE: Because entrances also serve as exits, some being particularly important in case of an emergency, and because the proximity of such exits to all parts of buildings and facilities, in accordance with their design and function, is essential (see 112 and 2000 through 2031 of American Standard Building Exits Code, A9.1-1953) it is preferable that all or most entrances (exits) should be accessible to, and usable by, individuals in wheelchairs and individuals with other forms of physical disability herein applicable.

5.2.2 At least one entrance usable by individuals in wheelchairs shall be on a level that would make the elevators accessible.

5.3 Doors and Doorways

5.3.1 Doors shall have a clear opening of no less than 32 inches when open and shall be operable by a single effort.

NOTE 1: Two-leaf doors are not usable by those with disabilities defined in 2.1, 2.2, and 2.5 unless they operate by a single effort, or unless one of the two leaves meets the requirement of 5.3.1.

NOTE 2: It is recommended that all doors have kick plates extending from the bottom of the door to at least 16 inches from the floor, or be made of a material and finish that would safely withstand the abuse they might receive from canes, crutches, wheelchair foot-platforms, or wheelchair wheels.

5.3.2 The floor on the inside and outside of each doorway shall be level for a distance of 5 feet from the door in the direction the door swings and shall extend 1 foot beyond each side of the door.

5.3.3 Sharp inclines and abrupt changes in level shall be avoided at doorsills. As much as possible, thresholds shall be flush with the floor.

NOTE 1: Care should be taken in the selection, placement, and setting of door closers so that they do not prevent the use of doors by the physically disabled. Time-delay door closers are recommended.

NOTE 2: Automatic doors that otherwise conform to 5.3.1, 5.3.2, and 5.3.3 are very satisfactory.

NOTE 3: These specifications apply both to exterior and interior doors and doorways.

5.4 Stairs. Stairs shall conform to American Standard A9.1-1953, with the following additional considerations:

5.4.1 Steps in stairs that might require use by those with disabilities defined in 2.2 and 2.5 or by the aged shall not have abrupt (square) nosing. (See Fig. 1.)

NOTE: Individuals with restrictions in the knee, ankle, or hip, with artificial legs, long leg braces, or comparable conditions cannot, without great difficulty and hazard, use steps with nosing as illustrated in Fig. 1a, but can safely and with minimum difficulty use steps with nosing as illustrated in Fig. 1b.

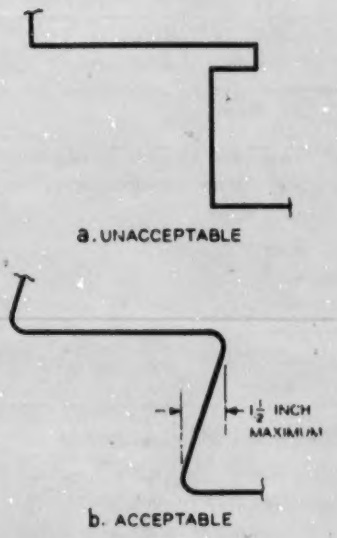


Fig. 1
Steps

5.4.2 Stairs shall have handrails 32 inches high as measured from the tread at the face of the riser.

NOTE: Where codes specify handrails to be at heights other than 32 inches, it is recommended that two sets of handrails be installed to serve all people. Where traffic is predominantly children, particularly physically disabled children, extra care should be exercised in the placement of handrails in accordance with the nature of the facility and the age group or groups being serviced. Dual handrails may be necessary.

5.4.3 Stairs shall have at least one handrail that extends at least 18 inches beyond the top step and beyond the bottom step.

NOTE: Care should be taken that the extension of the handrails is not in itself a hazard. The extension may be made on the side of a continuing wall.

5.4.4 Steps should, wherever possible, and in conformation with existing step formulas, have risers that do not exceed 7 inches.

5.5 Floors

5.5.1 Floors shall have a surface that is nonslip.

5.5.2 Floors on a given story shall be of a common level throughout or be connected by a ramp in accord with 5.1.1 through 5.1.6, inclusive.

EXAMPLE 1: There shall not be a difference between the level of the floor of a corridor and the level of the floor of the toilet rooms.

EXAMPLE 2: There should not be a difference between the level of the floor of a corridor and the level of a meeting room, dining room, or any other room, unless proper ramps are provided.

5.6 Toilet Rooms. It is essential that an appropriate number[8] of toilet rooms, in accordance with the nature and use of a specific building or facility, be made accessible to, and usable by, the physically handicapped.

5.6.1 Toilet rooms shall have space to allow traffic of individuals in wheelchairs, in accordance with 3.1, 3.2, and 3.3.

5.6.2 Toilet rooms shall have at least one toilet stall that—

(1) Is 3 feet wide

(2) Is at least 4 feet 8 inches, preferably 5 feet, deep

(3) Has a door (where doors are used) that is 32 inches wide and swings out

(4) Has handrails on each side, 33 inches high and parallel to the floor, 1½ inches in outside diameter, with 1½ inches clearance between rail and wall, and fastened securely at ends and center

(5) Has a water closet with the seat 20 inches from the floor

NOTE: The design and mounting of the water closet is of considerable importance. A wall-mounted water closet with a narrow understructure that recedes sharply is most desirable. If a floor-mounted water closet must be used, it should not have a front that is wide and perpendicular to the floor at the front of the seat. The bowl should be shallow at the front of the seat and turn backward more than downward to allow the individual in a wheelchair to get close to the water closet with the seat of the wheelchair.

5.6.3 Toilet rooms shall have lavatories with narrow aprons, which when mounted at standard height are usable by individuals in wheelchairs; or shall have lavatories mounted higher, when particular designs demand, so that they are usable by individuals in wheelchairs.

NOTE: It is important that drain pipes and hot-water pipes under a lavatory be covered or insulated so that a wheelchair individual without sensation will not burn himself.

5.6.4 Some mirrors and shelves shall be provided above lavatories at a height as low as possible and no higher than 40 inches above the floor, measured from the top of the shelf and the bottom of the mirror.

5.6.5 Toilet rooms for men shall have wall-mounted urinals with the opening of the basin 19 inches from the floor, or shall have floor-mounted urinals that are on level with the main floor of the toilet room.

5.6.6 Toilet rooms shall have an appropriate number[8] of towel racks, towel dispensers, and other dispensers and disposal units mounted no higher than 40 inches from the floor.

5.7 Water Fountains. An appropriate number[8] of water fountains or other water-dispensing means shall be accessible to, and usable by, the physically disabled.

5.7.1 Water fountains or coolers shall have up-front spouts and controls.

5.7.2 Water fountains or coolers shall be hand-operated or hand- and foot-operated. (See also American Standard Specifications for Drinking Fountains, Z4.2-1942.)

NOTE 1: Conventional floor-mounted water coolers can be serviceable to individuals in wheelchairs if a small fountain is mounted on the side of the cooler 30 inches above the floor.

NOTE 2: Wall-mounted, hand-operated coolers of the latest design, manufactured by many companies, can serve the able-bodied and the physically disabled equally well when the cooler is mounted with the basin 36 inches from the floor.

NOTE 3: Fully recessed water fountains are not recommended.

NOTE 4: Water fountains should not be set into an alcove unless the alcove is wider than a wheelchair. (See 3.1.)

5.8 Public Telephones. An appropriate number[8] of public telephones should be made accessible to, and usable by, the physically disabled.

NOTE: The conventional public telephone booth is not usable by most physically disabled individuals. There are many ways in which public telephones can be made accessible and usable. It is recommended that architects and builders confer with the telephone company in the planning of the building or facility.

5.8.1 Such telephones should be placed so that the dial and the handset can be reached by individuals in wheelchairs, in accordance with 3.3.

5.8.2 An appropriate number[8] of public telephones should be equipped for those with hearing disabilities and so identified with instructions for use.

NOTE: Such telephones can be used by everyone.

5.9 Elevators. In a multiple-story building, elevators are essential to the successful functioning of physically disabled individuals. They shall conform to the following requirements:

5.9.1 Elevators shall be accessible to, and usable by, the physically disabled on the level that they use to enter the building, and at all levels normally used by the general public.

5.9.2 Elevators shall allow for traffic by wheelchairs, in accordance with 3.1, 3.2, 3.3 and 5.3.

5.10 Controls. Switches and controls for light, heat, ventilation, windows, draperies, fire alarms, and all similar controls of frequent or essential use, shall be placed within the reach of individuals in wheelchairs. (See 3.3.)

[8] See 2.13.

5.11 Identification. Appropriate identification of specific facilities within a building used by the public is particularly essential to the blind.

5.11.1 Raised letters or numbers shall be used to identify rooms or offices.

5.11.2 Such identification should be placed on the wall, to the right or left of the door, at a height between 4 feet 6 inches and 5 feet 6 inches, measured from the floor, and preferably at 5 feet.

5.11.3 Doors that are not intended for normal use, and that might prove dangerous if a blind person were to exit or enter by them, should be made quickly identifiable to the touch by knurling the door handle or knob. (See Fig. 2.)

EXAMPLE: Such doors might lead to loading platforms, boiler rooms, stages, fire escapes, etc.

5.12 Warning Signals

5.12.1 Audible warning signals shall be accompanied by simultaneous visual signals for the benefit of those with hearing disabilities.

5.12.2 Visual signals shall be accompanied by simultaneous audible signals for the benefit of the blind.

5.13 Hazards. Every effort shall be exercised to obviate hazards to individuals with physical disabilities.

5.13.1 Access panels or manholes in floors, walks, and walls can be extremely hazardous, particularly when in use, and should be avoided.

5.13.2 When manholes or access panels are open and in use, or when an open excavation exists on a site, particularly when it is approximate to normal pedestrian traffic, barricades shall be placed on all open sides, at least 8 feet from the hazard, and warning devices shall be installed in accord with 5.12.2.

5.13.3 Low-hanging door closers that remain within the opening of a doorway when the door is open, or that protrude hazardously into regular corridors or traffic ways when the door is closed, shall be avoided.

5.13.4 Low-hanging signs, ceiling lights, and similar objects or signs and fixtures that protrude into regular corridors or traffic ways shall be avoided. A minimum height of 7 feet, measured from the floor, is recommended.

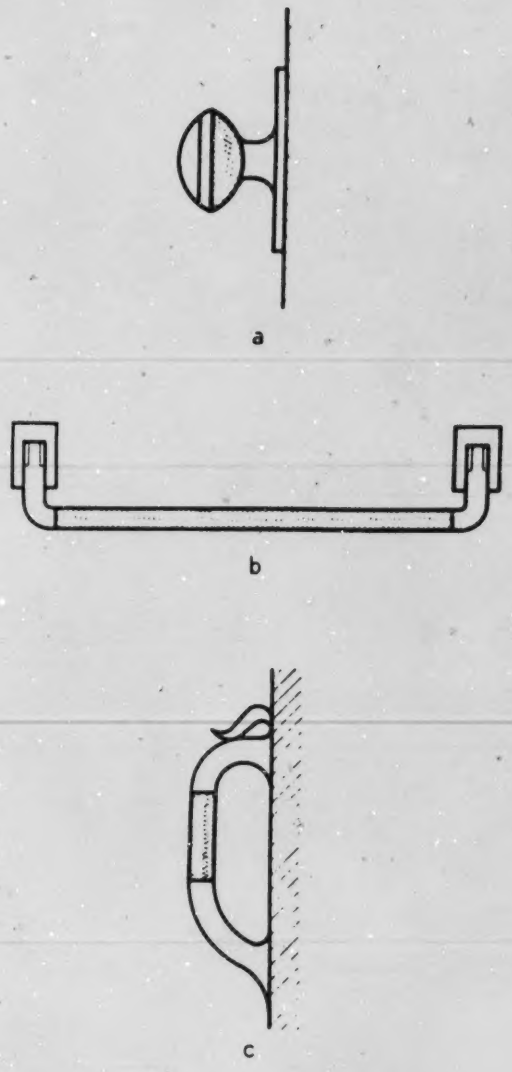


Fig. 2
Knurled Door Handles and Knobs

5.13.5 Lighting on ramps shall be in accord with 1201, 1202, 1203, and 1204 of American Standard A9.1-1953.

5.13.6 Exit signs shall be in accord with 1205 of American Standard A9.1-1953, except as modified by 5.11 of this standard.

BUILDING CODE OF THE CITY OF NEW YORK

INTRODUCTION

In terms of provisions for the physically handicapped, the Building Code of the City of New York exceeds the New York State Building Construction Code in many areas. It mandates access for the physically handicapped in a wider range of buildings and imposes no cumulative gross floor area criteria whatsoever. Furthermore, the City Code, Title C, Part II, Sub-Article C26-100.4 clearly states: "This Code shall be liberally interpreted to secure the beneficial purposes thereof. Any conflict or inconsistency between the requirements of this Code and applicable state and federal laws and regulations shall be resolved in favor of the more restrictive requirement." Inconsistencies exist between both the City and State Codes and the City Code and federal law. The specific provisions of the City Code, if more restrictive, take precedence over the rules of the State Code concerning facilities for the handicapped; and, provisions for the handicapped from the State Code apply if no consideration is given the provision in the City Code. Additionally, access must also be provided to the handicapped in any public building within the City of New York constructed, altered, leased, or financed by the Federal government or with Federal assistance, according to Public Law 90-480, and to any public building constructed, altered, or financed with State assistance, according to State law. Thus, if a building used by the public is not required to provide access under the rules of the City Code, the building must be made accessible to the handicapped if it falls within the above-mentioned criteria of Public Law 90-480 or the public building laws of New York State (Chapters 449, 656). In reality then, an individual involved in any aspect of the building code jurisdiction in the city of New York must serve three masters.

Of particular interest in the City Code is the presence of a step-by-step, detailed enforcement procedure, a procedure absent from the State Code entirely. This method can be an effective tool in securing compliance with rules requiring facilities for the physically disabled.

The numerical designation of provisions in the official version of the City Code is retained in full in the following pages, as is the classification of Chapter 26 by title and article. Explanation, illustration, and recommendations where necessary are provided for each rule concerning the handicapped. Reference is also made to relevant portions of the New York State Code where applicable. A thorough knowledge of the State Code, printed elsewhere in this volume, is a necessity since certain requirements and facilities of the State Code for the handicapped are untouched in the City Code.

The preface (not a part of the code itself) to the Building Code of the City of New York marks December 6, 1968 as the effective date of rules therein. Also, a few provisions relating to the physically handicapped became effective by amendments beyond December 6, 1968. The preface further states that "the registered architect and professional engineer are assigned important new design and inspection responsibility." A portion of this responsibility falls in the area of design of facilities for the physically handicapped since all such facilities were not required by the Code in effect before December of 1968. Thus, architects and engineers share the enforcement responsibility of this Code since they must be fully aware of the Code's design criteria for the physically disabled as building construction is planned.

CHAPTER 26 – ADMINISTRATIVE CODE

Title A
General Provisions

641-4.0 Complaint Book

The department shall keep a general complaint book, or several such books in which may be entered any complaint made by any person in reference to any building. Such entry shall include the name and residence of the complainant, the name of the person complained of, the date of the entry of the complaint and any suggested remedies. Such book shall be open to public examination during the office hours of the department, subject to such regulations as the commissioner may prescribe. The commissioner shall cause all complaints to be investigated.

Explanation: This provision is the first of several tools that all citizens possess to correct violations of the Code whether or not they pertain to required facilities for the disabled. It has impact since the Department of Buildings is required by law to investigate all complaints.

643a-4.0 Stop-Work Notices and Orders

Notwithstanding the provisions of sections 643a-1.0 – 643a-3.0, a notice of order to stop work may be issued by the commissioner, or his authorized representative, at any time when it is found that building work is being executed in violation of the provisions of any law, rule or regulation enforceable by the department, or in a dangerous or unsafe manner. Such notice or order may be given orally or in writing to the owner, lessee or occupant of the property involved, or to the agent of any of them, or to the person or persons executing the work and may require all persons in and about the building or premises to vacate the same forthwith, and also require such work to be done as, in the opinion of the commissioner, may be necessary to remove any danger therefrom.

Explanation: This provision is primarily a measure for safety during building construction or alteration. Periodic inspections as construction progresses are required by this Code. This provision would also allow the Department of Buildings to halt building construction or alteration if facilities for the physically disabled are required, but for whatever reason are not being included in the building.

643a-6.0 Enforcement Proceedings

a. Upon the violation of any law, rule or regulation enforceable by the department, or the failure to comply with any order issued by the commissioner thereunder, the commissioner may, in his discretion, request the corporation counsel to institute legal proceedings to restrain, correct or abate such violation, or to compel compliance with such order; and the corporation counsel shall thereupon institute such actions or proceedings as may be necessary and appropriate for such purposes.

b. Such actions and proceedings may be instituted by the corporation counsel in the name of the city in any court of civil jurisdiction in the city and shall be given preference over pending causes therein. In such actions or proceedings, the city may apply for restraining orders, preliminary injunctions or other provisional remedies, with or without notice; and no undertakings shall be required as a condition to the granting and issuing of any such order, injunction or remedy, or by reason thereof.

Explanation: We include this provision to point out the potentially powerful tools the City of New York possesses to secure compliance with this Code. Although we seriously doubt that this provision would ever be used to achieve enforcement of rules concerning facilities for the disabled, it exists as a strong deterrent to any violations of this Code whatsoever.

643a-9.0 Non-compliance with Orders: Execution of Work by Department

Upon the failure to comply with any order of the commissioner within the time limited thereby, and subject to the provisions of article 8 of title C of this chapter, any work required to be executed by such order may be executed by the commissioner through the officers, agents or contractors of the department; and the city shall be reimbursed promptly for all costs and expenses of such work. Such costs and expenses shall become a lien upon the premises involved and named in the commissioner's order, from the time of filing of a notice of lis pendens as provided in section 643a-5.0; and such lien shall be enforceable in accordance with the mechanics' lien laws applicable in the city.

Explanation: Again, it is highly improbable that the Department of Buildings would ever be required to correct violations of the Code relative to facilities for the handicapped using its own resources. A building inspector who is thoroughly knowledgeable in the terms of this Code will spot such violations long before this rule need be called upon. We include it to point out again the strength of enforcement rules in this Code, and perhaps to demonstrate the weakness of the New York State Code in terms of specific enforcement procedure. The New York State Code simply charges local officials with enforcement duties; the State imposes no specific deterrents to non-compliance as does the City. If each locality promulgated enforcement rules as effective as those in the City Code, this volume would be unncessary. Currently, this is not the case. We recommend that local or municipal governments which accept the protection of the New York State Code enact enforcement procedures as forceful as those discussed above.

Title C, Part I
Building Construction

Article 1
General Provisions

C26-21.0 Approval of Plans

Whenever plans are required to be filed in connection with an application for a permit, as provided in the Building Code, all such plans shall be approved by the commissioner prior to the commencement of any work thereunder. All plans and all applications for approval thereof, shall comply with the requirements

of the Building Code, subject to such exceptions and exemptions as may be therein provided, and all elevations on plans shall be referred to the United States coast and geodetic survey mean sea level datum of 1929, which is hereby established as the city datum.

Explanation: Although this is a rather standard provision in all building construction codes, it is reprinted here because we wish to emphasize that the enforcement of code provisions for the physically handicapped is most easily achieved when the required facilities are included in the early design stages. At that point in the building construction process when it is realized that facilities for the disabled have been overlooked, it becomes much more costly to the builder to correct such violations.

C26-62.0 Rules Covering Projections Beyond Street Line

All rules governing the construction of building projections beyond the street line and all surface and sub-surface construction beyond the street line and within the curb line, including curb cuts and driveways, the coverings thereof and the entrance thereto, and the issuance of permits in reference thereto, shall be adopted and promulgated by the commissioner. Nothing herein contained, however, shall be deemed to impair the powers and duties of the commissioner of parks and the commissioner of highways to adopt and promulgate such additional rules as may be necessary with respect to the regulation and disposition of projections and encroachments beyond the street line, under and pursuant to the provisions of section 1105 of the charter.

Explanation: It is highly unlikely that new building construction to which the physically handicapped have access will incorporate projections beyond the street line. Such projections may be required to meet the Code mandates for alteration of existing construction. This provision simply separates the jurisdictions of the Departments of Buildings, Parks, and Highways concerning all such projections Where such projections are ramps to provide access to the disabled in existing buildings, they must adhere to the requirements of C26-407.2 concerning the projection limitation of ramps and C26-604.10 regarding ramp design specifications.

Title C, Part II
Building Code

Article 1
Administration & Enforcement

C26-100.1 Title

This Code shall be known and may be cited as the "building code of the City of New York," and is hereinafter referred to as "this code" or "the code."

C26-100.3 Scope

This code shall apply to the construction, alteration, repair, demolition, removal, maintenance, occupancy and use of new and existing buildings in the City of New York, including the installation, alteration, repair, maintenance and use of service equipment therein, except as provided in section 1803 (6) of the New York City charter.

Explanation: This Code applies to all new building begun after December 6, 1968 and to the alteration or repair of existing building subject to the conditions of Sub-article 103.0 following.

C26-100.4 Interpretation

This Code shall be liberally interpreted to secure the beneficial purposes thereof. Any conflict or inconsistency between the requirements of this Code and applicable state and federal laws and regulations shall be resolved in favor of the more restrictive requirement.

Explanation: As previously mentioned, Public Law 90-480 requires accessibility for the handicapped in any building constructed, altered, leased, or financed with Federal assistance, and Chapters 449, 656 of the Laws of New York State require accessibility in public buildings constructed, altered, or funded by the State or its municipalities. Also, many requirements for the disabled found in the State Code are not included in the City Code. Since the State Code is a minimum requirement, any rules from the State Code which are not covered in the City Code are discussed in the ensuing pages.

C26-100.5 Effective Date

Any work for which an application for a permit was submitted to the department prior to the effective date of this Code, or for which an application for a permit is submitted to the department within a period of 12 months after the effective date of this Code, may, however, at the option of the owner, be performed in its entirety in accordance with the requirements of this Code, or in accordance with the requirements of the building laws and regulations previously in force in the City of New York, provided that such work is commenced within 12 months after the date of issuance of a permit therefor and is diligently carried on to completion. This section shall not apply to the requirements of subarticle 1909.0 which shall become effective upon enactment of this local law.

Explanation: This rule provided a possible two-year "grace period" to the requirements of this new Code. However, it is improbable that buildings qualifying for this exclusion from the new Code are still being constructed. Basically, this provision is no longer applicable to new or existing building.

C26-100.6 Enforcement

This Code shall be enforced by the Commissioner of Buildings, pursuant to the provisions of section 1804 of the New York City charter, as amended, except that the fire commissioner shall also enforce the provisions of this Code relating to obstruction of aisles, corridors, and exits, and to the maintenance of fire-preventive and fire extinguishing equipment and devices, and except that the commissioner of marine and aviation shall enforce all the provisions of this Code with respect to buildings under the jurisdiction of the department of marine and aviation.

Explanation: We are primarily concerned in this publication with the enforcement of Code provisions requiring facilities for the physically handicapped. With the built-in deterrents to non-compliance with this Code previously discussed, no viable reason exists for the failure of Code enforcement concerning provisions for the physically handicapped.

C26-100.7 Variations

The requirements and standards prescribed in this Code shall be subject to variation in specific cases by the Commissioner, or by the board of standards and appeals, under and pursuant to the provisions of section 1804 (4) (b) and section 666 of the New York City charter, as amended.

Explanation: It is our contention that with proper site development, planning, and design, there should never be a need for a variation of Code rules concerning the disabled for new construction. The only instance where a variation might be necessary (but only after all alternatives are exhausted) is in the alteration of existing building where providing for accessibility for the handicapped would make the building virtually unusable.

C26-100.8 Separability

If any provisions of this Code shall be held invalid or ineffective in whole or in part, or inapplicable to any person or situation, it is the purpose and intent of this Code that all other provisions thereof shall nevertheless be separately and fully effective, and that the application of any such provision to other persons or situations shall not be affected.

Explanation: As this rule concerns provisions for the physically handicapped, if a specific rule is held invalid or ineffective concerning one precise facility for the physically handicapped, other Code provisions for the disabled shall not be voided in this given situation, nor shall the determination of invalidity in this one case stand as a precedent for future similar situations. Judgments of invalidity or ineffectiveness of a provision apply only to individual situations.

C26-101.1 Building Matters Covered

The provisions of this Code shall cover all matters affecting or relating to buildings, as set forth in section C26-100.3, and shall extend to excavation operations, and to all types of buildings and structures and their appurtenant constructions, including vaults, signs, projections, and accessory additions, together with all surface and sub-surface construction within the curb line, including curb cuts and driveways, the coverings thereof and entrances thereto, and the issuance of permits in reference thereto.

Explanation: The primary matters affecting buildings as set forth in section C26-100.3 which are of importance to the physically handicapped are the construction, alteration or repair of new and existing building. The construction of curb cuts regulated by the Department of Buildings shall adhere to the New York State Curb Cut Law ("Official Compilation of Codes, Rules and Regulations of the State of New York," Title 17, Subchapter D, Part 170), effective January 1, 1976, and implemented by New York State Department of Transportation Engineering Instruction 75-90. This regulation mandates a maximum curb cut grade ratio of 1 in 12, a minimum curb cut width of 48 inches, and a maximum curb cut lip no greater than 5/8 of an inch in height. It is reprinted with drawings at the beginning of the New York State section, pp. NYS 4 – NYS 9.

C26-101.2 Matters Not Provided For

Any matter or requirement essential for the fire or structural safety of a new or existing building or essential for the safety or health of the occupants or users thereof or the public, and which is not covered by the provisions of this Code or other applicable laws and regulations, shall be subject to determination and requirements by the commissioner in specific cases.

Explanation: This rule would allow the Commissioner of Buildings to include additional facilities for the handicapped not required by this Code or State and Federal law if such facilities are necessary to maintain the health and well-being of severely handicapped tenants, employees, spectators, etc.

Sub-Article 103.0 Alteration of Existing Buildings

Subject to the provisions of section 100.4, and except as otherwise specifically provided by the provisions of this Code, the following provisions shall apply to the alteration of existing buildings whether made voluntarily or as a result of damage, deterioration, or other cause.

C26-103.1 Alterations Exceeding 60 Per Cent of Building Value

If the cost of making alterations in any 12-month period shall exceed 60 per cent of the value of the building, the entire building shall be made to comply with the requirements of this Code, except as provided in section C26-103.6.

Explanation: According to the State Code, a building being altered or repaired must be treated as new construction and made to comply with State Code rules when the cost of such alterations or repairs within any six-month period exceeds 50 per cent of the cost of replacement of the building at the beginning of that six-month period. Such buildings undergoing alterations might require facilities for the disabled if they meet occupancy or use criteria. It is difficult to say which provision is more restrictive since the State Code determinant is building replacement cost while the City Code uses building value. There are many intangibles involved in drawing a conclusion as to which of these two rules is more restrictive; thus, if a building undergoing alterations meets either requirement, it should be treated as new construction. Secondly, section C26-103.6 states: "At the option of the owner, regardless of the cost of the alteration or conversion, an alteration may be made to multiple dwellings or a building may be converted to a multiple dwelling in accordance with all requirements of this Code or in accordance with all applicable laws in existence prior to December 6, 1968, provided the general safety and public welfare are not thereby endangered" This rule, included to encourage the rehabilitation of abandoned buildings, would still not exempt the building owner from providing facilities for the disabled if the State Code criteria (cumulative gross floor area and occupancy group) apply to the particular building. For example, an abandoned apartment house of 40,000 square feet undergoing complete repairs must provide required facilities for the physically handicapped.

C26-103.2 Alteration Between 30 Per Cent and 60 Per Cent of Building Value

If the cost of making alterations in any 12-month period shall be between 30 per cent and 60 per cent of the value of the building, only those portions of the building altered shall be made to comply with the requirements of this Code, except as provided in sections C26-103.6 and C26-103.7.

Explanation: Section C26-103.7 deals with alterations to one- and two-family dwellings, buildings which do not require facilities for the handicapped. Section C26-103.6 would exempt smaller buildings from

complying specifically with this Code but it would not apply if a converted multiple dwelling meets the criteria for the disabled in the State Code. For example, suppose 40% of a hotel is to be repaired; if the cumulative gross floor area of the protion required exceeds 20,000 square feet, then this portion would require facilities for the handicapped. Additionally, there are no provisions in the State Code concerning alterations of buildings where replacement costs are under 50%. Thus, for alterations between 50% and 60% of replacement costs or building value, either the State or City Code might be more restrictive; for alterations between 30% and 50% of building value, the City Code is more restrictive.

C26-103.3 Alterations Under 30 Per Cent of Building Value

Except as otherwise provided for in sections C26-103.6 and C26-103.7, if the cost of making alterations in any 12-month period shall be under 30 per cent of the value of the building, those portions of the building altered may, at the option of the owner, be altered in accordance with the requirements of this Code, or altered in compliance with the applicable laws in existence prior to December 6, 1968, provided the general safety and public welfare are not thereby endangered.

Explanation: This is another provision more restrictive than the State Code. We encourage building owners to take the option of the present Code and to include facilities for the physically handicapped wherever possible when alterations under 30 per cent of building value are accomplished.

C26-103.4 Alterations Involving Change In Occupancy or Use

Except as otherwise provided for in section C26-103.6, if the alteration of a building or space therein results in a change in the occupancy group classification of the building under the provision of article 3 then the entire building shall be made to comply with the requirements of this Code. If the alteration of a space in a building involves a change in the occupancy or use thereof, the alteration work involved in the change shall be made to comply with the requirements of this Code and the remaining portion of the building shall be altered to such an extent as may be necessary to protect the safety and welfare of the occupants.

Explanation: This provision is equivalent to the requirements of the State Code. Again, we emphasize that C26-103.6 does not apply to repaired or converted multiple dwellings if such dwellings are large enough to require facilities for the disabled mandated by the State Code. Furthermore, this Code shall apply if the occupancy group is changed in a building of single occupancy, and if the occupancy group of a space within a building of mixed or multiple occupancy is changed.

C26-103.5 Alteration Cost: Building Value

For the purpose of applying the foregoing provisions of this subarticle, the cost of making alterations shall be determined by adding the estimated cost of making the proposed alterations computed as of the time of submitting the permit application, to the actual cost of any and all alterations made in the preceding 12-month period; and the value of the building shall be determined at the option of the applicant on the basis of 1.25 times the current assessed valuation of the building, as adjusted by the current State equalization rate, or on the basis of the current replacement cost of the building, provided that satisfactory evidence of current replacement cost is submitted to the Commissioner.

Explanation: There are no options in determining alteration cost. Estimated alteration costs are added to actual alteration costs in the preceding 12-month period to determine this figure. At the time of renovations permit application, the building owner may choose one of the two above-mentioned options for determining building value. Alteration cost is then compared to building value to determine if C26-103.1, 103.2, or 103.3 applies.

C26-104.0 Minor Alterations: Ordinary Repairs

C26-104.3 Work Not Constituting Minor Alterations or Ordinary Repairs

For the purposes of this Code, minor alterations or ordinary repairs shall not include the cutting away of any wall, floor, or roof construction, or any portion thereof; or the removal, cutting or modification of any beams or structural supports; or the removal, change, or closing of any required means of egress, or the rearrangement or relocation of any part of the building affecting loading or exit requirements, or light, heat, ventilation, or elevator requirements; nor shall minor alterations or ordinary repairs include additions to, alterations of, or rearrangement, relocation or removal of any standpipe or sprinkler, piping, water distribution piping, house sewer, private sewer, or drainage system, including leaders, or any soil, waste or vent pipe, or any gas distribution system, or any other work affecting health or the fire or structural safety of the building.

Explanation: This is a significant provision for the physically handicapped. "Minor alterations" and "ordinary repairs" do not include changes of required means of egress, relocation of building parts affecting exit requirements, or relocation of building parts affecting elevator requirements. Thus, such changes must be considered as "alterations" subject to the requirements of provisions C26-103.1 through C26-103.7. In fact, almost all of the rules of this Code affecting facilities for the handicapped would be considered alterations if such were being made to existing buildings. See the New York State Building Construction Code, sections B105-2 (Multiple Dwelling Code) and C105-2 (General Building Construction Code) concerning alterations to existing buildings, pp. NYS 12-13 and NYS 41-42.

Article 3

Occupancy and Construction Classifications

C26-301.0 Occupancy Classifications

C26-301.1 Occupancy Groups

Below is a list of occupancy groups and sub-groups that shall be established for classifying buildings and spaces in accordance with the provisions of sub-articles 302.0 through 311.0:

Occupancy Group	Classification
A	High hazard
B-1	Storage (moderate hazard)
B-2	Storage (low hazard)
C	Mercantile
D-1	Industrial (moderate hazard)
D-2	Industrial (low hazard)
E	Business
F-1a	Assembly (theaters, etc.)

Occupancy Group	Classification
F-1b	Assembly (churches, concert halls, etc.)
F-2	Assembly (outdoors)
F-3	Assembly (museums, etc.)
F-4	Assembly (restaurants, etc.)
G	Education
H-1	Institutional (restrained)
H-2	Institutional (incapacitated)
J-1	Residential (hotels, etc.)
J-2	Residential (apartment houses, etc.)
J-3	Residential (one- and two-family dwellings)
K	Miscellaneous

Explanation: Listed below are some of the typical occupancy uses for the groups set forth above. We suggest further that the reader see the following sections of the State Code: B202 and C202 regarding classification of buildings and B214 and C215 regarding required facilities for the physically handicapped, pp. NYS 13-17 and NYS 42-52.

Occupancy Group	Designation	Representative Occupancies
HIGH HAZARD	A	Paint shop and storerooms; industrial smoke houses; grain elevators; tanneries with enameling or japanning; distilleries; sugar, starch, cereal, feed, flour, and grist mills
STORAGE	B-1	Warehouses; storerooms; freight depots; stables; coal pockets; group 1 public garages
	B-2	Warehouses; storerooms; private garages; greenhouses; group 2 public garages
MERCANTILE	C	Retail stores; shops; sales rooms; markets
INDUSTRIAL	D-1	Baking plants; breweries; automobile repair shops; foundries; heliports; scenery shops
	D-2	Mechanical and electrical equipment rooms; commercial laundries; vocational training shops; laboratories; boiler and furnace rooms; nonresidential kitchens; power plants
BUSINESS	E	Office buildings; banks; civic administration buildings; radio and television stations not classified as places of assembly or as equipment rooms; telephone exchanges; barber and beauty shops; automotive service stations; neighborhood family care centers; medical offices or group medical centers
ASSEMBLY	F-1a	Theaters; playhouses; opera houses
	F-1b	Churches, lecture halls, courtrooms, convention halls, concert halls; sports arenas; planetariums; motion picture theaters
	F-2	Grandstands; bleachers; stadiums; drive-in theaters; amusement attractions and devices; bandstands; skating rinks
	F-3	Exhibition halls; galleries; gymnasiums; museums; passenger terminals; bowling alleys; billiard parlors; skating rinks
	F-4	Restaurants; night clubs; cabarets; dance halls; ballrooms; banquet rooms; cafeterias; snack bars, taverns; coffee houses

Occupancy Group	Designation	Representative Occupancies
EDUCATIONAL	G	Schools; academies; universities; libraries
INSTITUTIONAL	H-1	Jails; prisons, reformatories; mental institutions
	H-2	Hospitals; sanitariums; clinics; nursing homes; orphanages; homes for the aged; day nurseries
RESIDENTIAL	J-1	Hotels; motels; lodging houses; rooming houses
	J-2	Apartment houses; apartment hotels; school dormitory buildings
	J-3	One-family and two-family dwellings; rectories; convents
MISCELLANEOUS	K	Sheds; fences; signs

(This list of occupancies is representative only and is not complete. See Reference Standard RS 3-3 for additional listings.) There are differences between the City and State Codes concerning the classification of building construction and the provisions governing these groups. As shall be pointed out in the pages ahead, these differences affect greatly the number and kind of buildings required to provide access to the physically handicapped in the City of New York. Basically, the City Code is far more restrictive than the State Code in terms of required access for the handicapped; the City Code opens building use to the disabled which the State Code does not.

C26-301.6 Multiple Occupancy or Use

When a building or space is sued for multiple purposes, involving different activities at different times, the building or space shall be given a separate occupancy group classification for each of the activities involved. The design and construction of the building or space shall be in accordance with the most restrictive provisions of this Code that apply to any of the occupancy group classifications utilized. However, a minor variation of any occupancy or use of a space from technical compliance with a particular space occupancy classification shall not be prohibited if such variation is normally associated with the occupancy classification and no specific danger or hazard is created.

Explanation: For instance, a space may have a Group E (Business) occupancy for daytime affairs and a Group F-1a (Assembly) occupancy for evening activities. In this case, the more restrictive provisions for building construction apply to the Assembly occupancy. Although this space has two occupancy classes, it is constructed as an F-1a Assembly space.

Article 4
Building Limitations

C26-407.0 General Projection Limitations

C26-407.2 Ramps

When a building erected prior to December 6, 1968 is altered to provide access to individuals in wheelchairs, ramps constructed to provide such access may, with the approval of the Commissioner, project beyond the street line for a distance of not more than 44 inches.

Explanation: For legal purposes, the building lot line or property line is also known as the street line, where the property ajoins a street of public roadway. In many instances, a building is erected close to or right up to this property/street line. If a ramp is added to such a building which was erected prior to December 6, 1968, in order to provide access to individuals in wheelchairs, such a ramp may be allowed to project from the building a distance of 44 inches. Said ramp must be approved by the appropriate Commissioner(s), Buildings and/or Highways. (Figure 1)

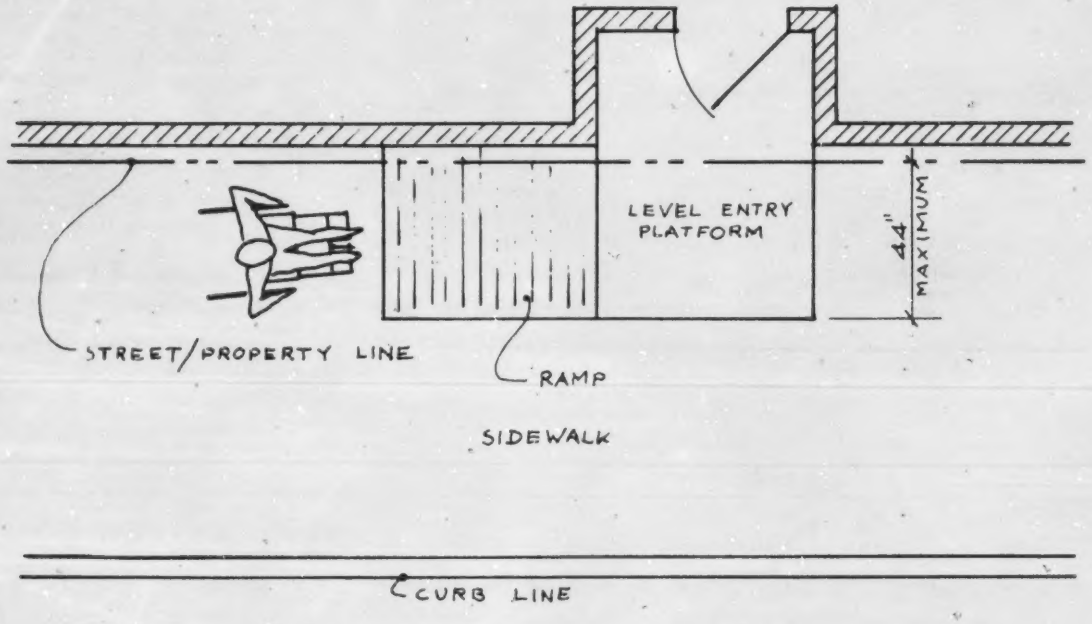


Figure 1. Ramp Projecting Past Street Line

C26-407.4 Projections Removable

All projections permitted beyond the street line by the provisions of this article shall be constructed so that they may be removed at any time without endangering the structural safety or fire safety of the building except that footings as permitted under section C26-408.2(a) need not be removable.

Explanation: The most commonly used materials for ramps are poured concrete or asphalt concrete. Ramps so constructed could be removed without endangering the structural or fire safety of a building. Ramps of wood construction are not acceptable.

C26-407.6 Existing Projections

Any part of a building that projects beyond a street line on January first, nineteen hundred thirty-eight may be maintained as constructed until its removal is directed by the council or the board of estimate.
(a) Alterations – Alterations to existing projections beyond the street line may be permitted in whole or in part, provided that such alterations conform with the requirements of this article.

Explanation: Occasionally, this rule may affect the physically handicapped if the existing projection to be altered is a step(s). We recommend in such cases that the alteration be accomplished by a change from steps to a ramp complying with this Code.

Article 6
Means of Egress

C26-600.0 General

C26-600.3 Inadequate Exits for Existing Structures

Every structure existing on the effective date of this Code which is not provided with exit facilities as prescribed in this Code, and in which the exit facilities are, in the opinion of the commissioner, inadequate for the safety of the occupants, shall be provided with such means of egress of fire protection as the commissioner shall direct.

Explanation: In existing buildings where exit facilities are determined by the Department of Buildings to be inadequate for occupant safety and where new means of egress are to be provided, the provisions of C26-601.1.d concerning Building Access for individuals in wheelchairs are to be considered. While the Commissioner of Buildings shall provide direction as to the proper means of egress, it is hoped that one primary entrance will be accessible to and usable by the physically handicapped.

Sub-Article 601.0 Determination of Exit Requirements

C26-601.1 Exit Requirements

The determination of exit requirements for a building shall be based upon the Occupancy Group classification of the building, the number of occupants, the floor area, the travel distance to an exit and the capacity of the exits, as provided in Table 6-1 and herein. Every floor of a building shall be provided with exit facilities for its occupant load. The occupant loads of floors shall not be cumulative for the purpose of designing vertical exits, except where one floor is used by another as a means of egress. Vertical exits provided from any floor above grade may serve simultaneously all floors above grade, and vertical exits provided from any floor below grade may serve simultaneously all floors below grade.

Explanation: It should be noted that the minimum width of corridors as provided in Table 6-1 helps to provide ease of mobility for the physically handicapped within buildings.

C26-601.1.a Mixed Occupancy

When a building is classified in more than one occupancy group in accordance with the provisions of section C26-301.3, the exit requirements for the entire building shall be determined on the basis of the occupancy group having the strictest exit requirements, or the exit requirements for each building section shall be determined separately.

Explanation: As provided in Table 6-1, there are differing maximum travel distances, capacities for ramps, corridor widths, etc., from one occupancy group to another. For mixed occupancies, the above option applies. In our opinion, the choice of separate exit requirements for each building section in a mixed occupancy building could provide several primary wheelchair-accessible entrances to the building itself, depending on the occupancy groups involved.

TABLE 6-1. DETERMINATION OF EXIT AND ACCESS REQUIREMENTS

Occupancy Group of Building or Space	Group Designation	Maximum Travel Distance (ft.)[a]		Capacity Number of Persons per Unit of Width				Corridors[i]	
				Doors Openings[m]		Stairs, Escalators[k]	Ramps,[b] Corridors, Exit Passageways,[j] Horizontal Exits	Min. Width (in.)	Max. Dead End[h] (length in ft.)
		Unsprinklered	Sprinklered	To Outdoors at Grade	All Other Exit and Corridor Doors				
High Hazard	A	N.P.	150	50	40	30	50	36	N.P.
Storage	B-1[c]	100	150	75	60	45	75	36	50
	B-2[c]	125	175	75	60	45	75	36	N.R.
Mercantile	C	150	200	100	80	60	100	36	50
Industrial	D-1	125	175	100	80	60	100	44	50
	D-2	150	200	100	80	60	100	44	50
Business	E	200	300	100	80	60	100	44	50
Assembly**	F	150	200	100	80	60	100	44	30
Educational	G	150	200	100	80	60	100	66[e]	30[d]
Institutional	H-1	125	175	50	40	30	50	36	40
	H-2	125	175	30	30	15	30	96[f]	30[g]
Residential	J-1	150	200	50	40	30	50	36	40
	J-2	150	200	50	40	30	50	36	40
	J-3	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.

N.P. – Not Permitted

*N.R. – No Requirements (except as provided in §C26-604.8)

**See Table 8-1 for exit and access requirements applying to places of assembly

Notes:

[a] For method of measurement see Section C26-601.4(c).

[b] Reduce listed capacity of ramps by 25 per cent when slope exceeds 1 in 10.

[c] Except for public garages. (See Section C26-709.0.)

[d] There shall not be more than one classroom on each side of a corridor between an exit and the end of the corridor (dead end).

[e] Applies to corridors serving classrooms. Other corridors shall have a minimum width of 44 in.

[f] Applies to corridors serving patients. Other corridors shall have a minimum width of 44 in.

[g] There shall be no patient bedrooms between an exit and the end of the corridor (dead end).

[h] See Section C26-604.2(d) for permissible increase.

[i] See Section C26-604.2.

[j] See Section C26-604.3.

[k] See Section C26-604.11.

[m] Where a door opening is divided by mullions into two or more door openings, each such opening shall be measured separately in computing the number of units of exit width.

*Local Law 54-1970

C26-601.1.c Multiple Occupancy or Use

Where a building, floor, or space is used for multiple purposes involving different activities at different times, that occupancy involving the greatest number of occupants shall be used in determining the exit requirements.

Explanation: For example, a building of Assembly occupancy could be used for Business occupancy purposes at a different time; consequently, exit requirements would be determined according to Table 6-1 for the Assembly occupancy use of the space.

C26-601.1.d Building Access

All buildings classified in other than occupancy groups A, B-1 or B-2, open structures of D-2, or J-3, shall have at least one primary entrance accessible to and usable by individuals in wheelchairs. Such entrance shall provide access to a level that makes elevators available in buildings where elevators are provided. Where ramps are used to comply with this requirement, they shall have a slope not greater than 1 in 12, and shall otherwise conform to the provisions of section C26-604.10. The commissioner may waive the requirements of this section in the alteration of buildings existing on the effective date of this code where compliance would impose such a hardship because of the physical impossibility of construction of the required ramp or access without making the building virtually unusable.

Explanation: (See Figures 2 & 3) Buildings in occupancy groups which shall have at least one primary entrance for individuals in wheelchairs include Mercantile (Group C), Industrial (Group D-1), enclosed Group D-2 Industrial (where manufacturing of products and materials is carried on indoors), Business (Group E), places of Assembly (Group F), Educational buildings (Group G), Institutional structures (Groups H-1 and H-2), and Residential buildings (Groups J-1 and J-2). This provision is far more restrictive than the New York State Code since it mandates access regardless of the cumulative gross floor area of a building. Access to buildings must also adhere to the rules of the State Code concerning path of travel. Path of travel shall extend from a public or private roadway, or from an automobile parking space reserved for use by the physically handicapped. It is preferable that the path of travel be the most direct route possible from the parking space or roadway to the building. The distance along the path of travel from a public or private roadway or from an automobile parking space reserved for use by the physically handicapped, to a building entrance door shall not exceed 200 feet. For many physically disabled, 200 feet of distance can be an obstacle in itself. While this may be an acceptable distance for some, the shortest possible path of travel is preferred.

Path of travel shall have a durable, finished surface. Steps or abrupt changes in level are not permitted. Many of the difficulties related to providing a path of travel for the physically handicapped can be solved through proper site development. Such a path of travel may be provided and aesthetic qualities may be maintained at the same time through the use of winding walks, terracing, retaining walls, etc. The surfaces should be scored or broom textured to reduce the possibility of slipping. Good design and workmanship are required so that wherever an expansion joint, ramp, or curb cut occurs in the path of travel, it shall never have a bump or projection above the adjoining surface greater than 5/8 of an inch. For Residential occupancies, access must also be provided to accessory public and recreational spaces such as dining rooms, meeting rooms, etc., to public toilet rooms and drinking fountains where provided for such accessory spaces, to general laundry rooms, and to refuse disposal locations. For all other occupancies where building access for individuals in wheelchairs is required, the path of travel shall extend to all public and occupied spaces within a building as set forth in the State Code.

Where walks are used for building access, they shall have a width of at least 48 inches. This width will allow a person in a wheelchair to make a complete 180° turn if he so desires; it also allows oncoming pedestrians to pass by. However, two wheelchairs approaching each other may not have enough room to pass. A walk width of 60 inches is preferred. Gradient of walks shall not exceed 1 in 20. Where the

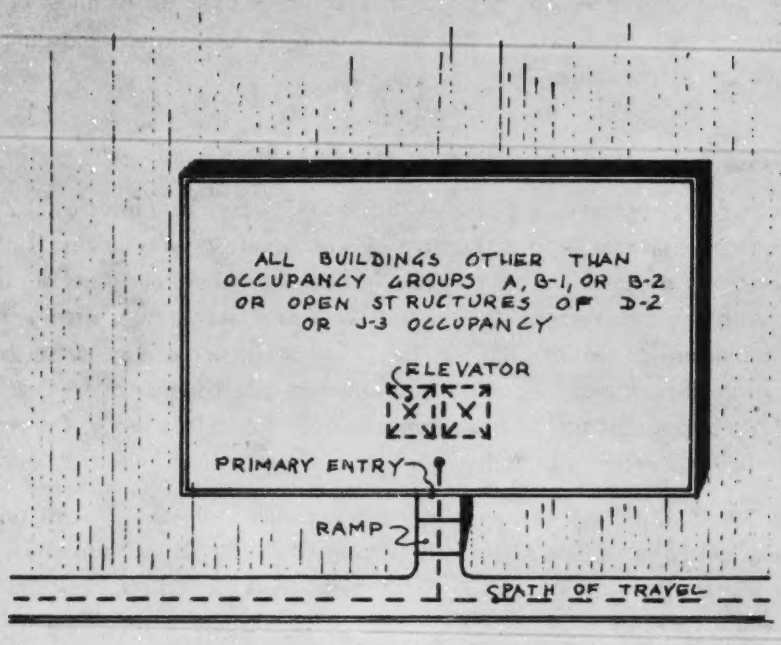


Figure 2. Access to Building

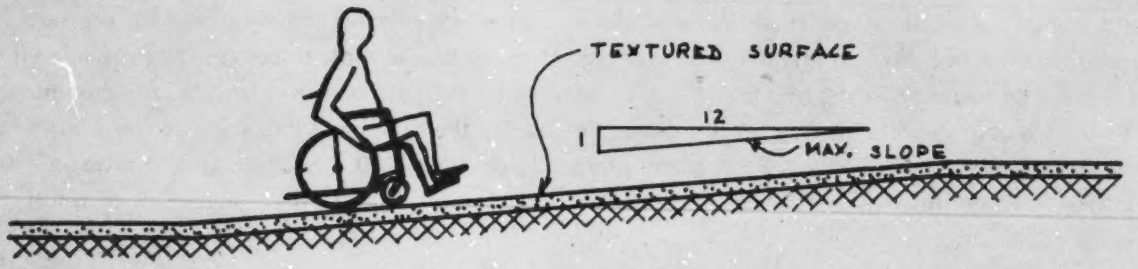


Figure 3. Maximum Slope of Ramps

gradient exceeds 1 in 20, the path shall be classified as a ramp. Any part of the path of travel which meets all other requirements pertaining to walks and path of travel and which is dead level or has a gradient of 1 in 20 or less is to be considered a walkway. If the slope is steeper than 1 in 20, yet not steeper than 1 in 12, the path of travel must be classified as a ramp. Under no conditions shall the slope of any portion of the path of travel for the handicapped exceed 1 in 12.

Guardrails at least 32 inches in height shall be provided at the sides of the path of travel where the adjoining surface drops more than 12 inches within three feet thereof. One dimension of opening in guardrail shall not exceed 6 inches. Any building entry platform along the path of travel which is 12 inches above the adjoining surface should be protected by guardrails. Also, the path of travel shall be provided with artificial light. Electric light of intensity sufficient for safe travel shall be provided throughout exits, for garages, and for spaces to which the public has access. Artificial lighting of walks, ramps, and parking spaces for the physically handicapped is also preferred. The reader is urged to refer to sections B214-2 and C215-2 of the State Code for path of travel requirements, pp. NYS 17-26 and NYS 52-61.

C26-604.0 Access Requirements and Exit Types

C26-604.1 General

Means of egress shall be provided for all buildings by one or more of the facilities listed below. Access and exit facilities not specifically covered in this section shall not be used to satisfy the exit requirements of this Code. Fire escapes shall not be permitted on new construction except that they may be used as exits on buildings existing on the effective date of this Code when such buildings are altered, subject to the approval of the Commissioner. Elevators or escalators shall be provided in all new buildings exceeding four stories in height.

Explanation: According to State Code rules, escalators are not permitted as part of the path of travel for the physically handicapped. Reference is directed to C26-601.1.d, which states that a building entrance for individuals in wheelchairs "shall provide access to a level that makes elevators available in buildings where elevators are provided." Although elevators need only be provided in all new buildings exceeding four stories in height, we recommend that elevators be provided for the physically handicapped in all buildings of more than one level. In addition, the following requirements and explanations of State Code rules for elevators deserve consideration.

Elevators shall have a clear inside depth of not less than 46 inches. An unobstructed area at least 4 feet by 5 feet shall be provided in front of the elevator door on the entrance story. For those physically handicapped who are compelled to use a wheelchair, an elevator with a depth of 46 inches, while acceptable, does not provide much mobility, particularly if the width of the elevator is minimal. An elevator car not less than 25 sq. ft. with a minimum dimension of 56 inches would give the physically handicapped freedom of movement within the elevator. This could be helpful in situations where the individual must carry large objects. Hoistway doors and car doors shall provide a clear opening at least 32 inches in width. In automatic elevators, the emergency controls and controls for stories that are within the path of travel shall be located no higher than 60 inches above the elevator platform. Controls shall have raised letters or other means that are identifiable by persons with visual handicaps. We also recommend the installation of braille plates for floor designation on each floor, located 60 inches above the floor on the fixed point at the open side of the elevator door. A maximum height of 60 inches above the platform will insure that controls will be within reach of all persons, including those in wheelchairs. Horizontal handrails shall be secured to at least two walls of the car, and located no higher than 36 inches above the car platform. The duration of opening on automatic elevator doors is also a problem for many physically handicapped. An elevator door closing on an individual as he or she enters the car may result in injury. Timers on elevator doors should be adjusted so that the handicapped have adequate time to enter or exit freely. Finally, for Residential occupancies, it is preferred that apartments or sleeping rooms on the entrance level be set aside for the physically handicapped. Since elevators are subject to mechanical failure, such breakdowns would not deny access to the handicapped at any time. (See Figure 4)

C26-604.2 Corridors

(e) Changes in Level – Changes in level requiring less than two risers in a corridor shall be by a ramp complying with section C26-604.10. Risers and treads shall comply with the requirements of section C26-604.8(e).

Explanation: According to C26-604.8(e), maximum riser height is 8¼ inches. A maximum riser height of 7 inches is preferred. Thus, a change in level of a corridor of less than 16½ inches of height requires a ramp. A change in level greater than 16½ inches height may be either steps or a ramp. (Figure 5)

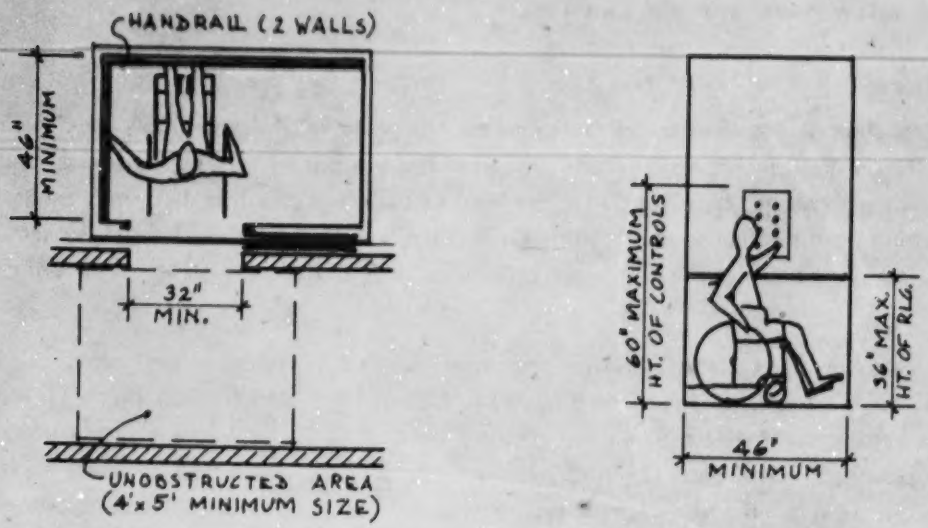


Figure 4. Minimum Elevator Requirements

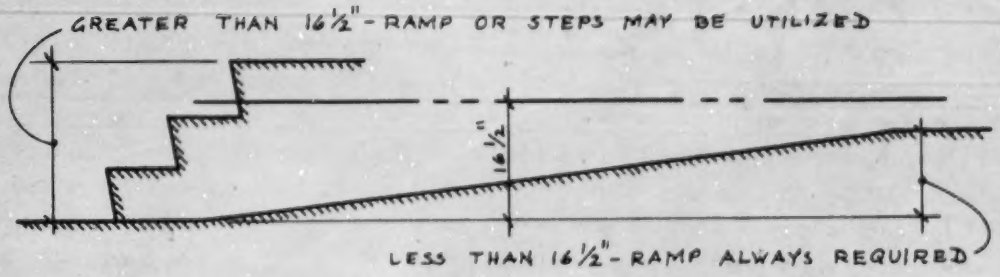


Figure 5. Change in Level – Corridors and Exit Passageways

C26-604.3 Exit Passageways

(d) Changes in Level – Changes in level requiring less than two risers in an exit passageway shall be by a ramp complying with section C26-604.10. Risers and treads shall comply with the requirements of section C26-604.8(e).

C26-604.4 Doors

Exit doors and doors providing access to exits shall comply with the following: (a) Exit doors – doors for required exits shall be self-closing swinging doors with 1½ hour fire protection rating, except in Occupancy Group J-3 buildings.

Explanation: Exit doors can be of the single or double swing type. This Code prohibits the use of vertically sliding doors, rolling shutters, and folding doors as exit doors in most occupancy groups. Self-closing devices on doors and power-operated and power-assisted doors under conditions of power failure shall have a maximum closing tension of 8 pounds. While this closing tension rating is acceptable, as a general rule the less tension rating a door closer has, the easier it is for the physically handicapped to open. Time-delay door-closing devices are also recommended. The placement of door mats or grates in front

of doors should be avoided as these often inhibit the progress of the wheelchair-user. Metal kick plates 7½ inches in height attached to doors are also recommended for safety and for the protection of the door itself.

(e) Door opening widths – The capacity of exit and corridor door openings shall be as listed in Table 6-1. Door jambs or stops and the door thickness when open shall not reduce the required width by more than 3 inches for each 22 inches of width. The maximum width of any swinging door leaf shall be 48 inches. The minimum nominal width of corridor and exit door openings shall be 36 inches, except that where a door opening is divided by mullions into two or more door openings, the minimum nominal width of each such opening shall be 32 inches. The minimum nominal width of other door openings shall be as follows:

(1) Door openings to all habitable and occupiable rooms – 32 inches.

(2) Door swinging in pairs (no mullion), opening – 48 inches.

(3) Door openings to rooms used by bedridden patients and all single door openings used by patients in buildings classified occupancy group H-2 – 44 inches.

(4) Door openings to toilet rooms in buildings to which the public has free access shall be 32 inches.

(5) Door openings giving access to at least one toilet, lavatory and bathtub or shower in each dwelling unit, in buildings or spaces classified in occupancy group J-1 or J-2, when such dwelling unit is accessible to individuals in wheelchairs – 32 inches.

(6) Door openings giving access to all toilets, lavatories and bathtubs or showers serving single room occupancies which are accessible to individuals in wheelchairs – 32 inches.

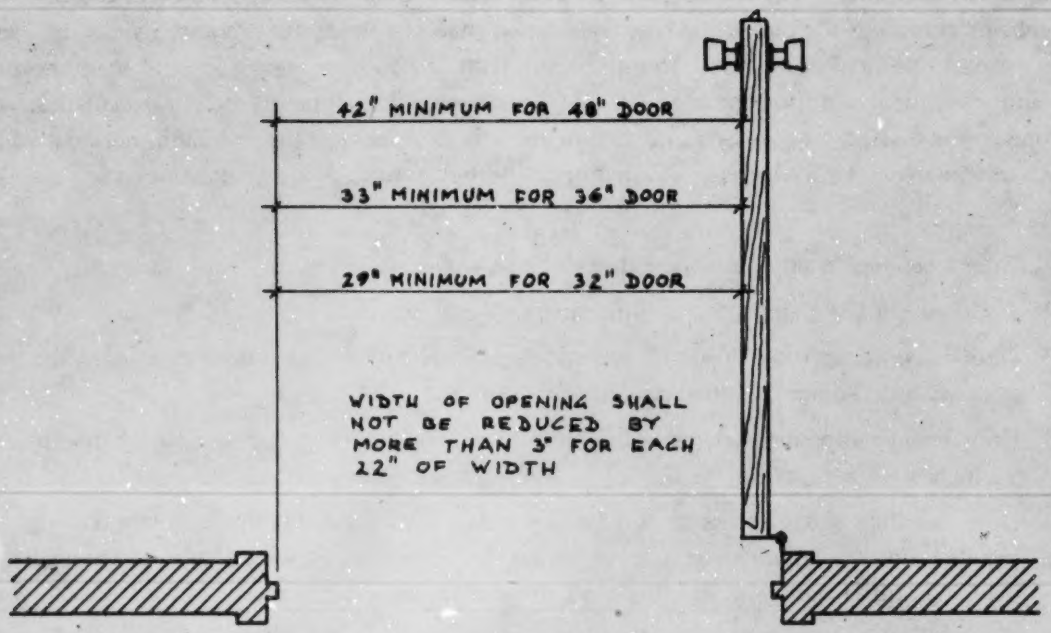
Explanation: The State Code is more restrictive than the City Code concerning door widths since the State mandates a 32-inch minimum clearance rather than a minimum nominal width; if 3 inches are taken away from a door opening for a jamb and door thickness, the remaining clearance would inhibit access for some wheelchair-users. We emphasize that a 32-inch minimum clear door opening width is a necessity for doorways to be used by the physically handicapped. Concerning provisions 5 and 6, the number of dwelling units or sleeping rooms which shall have 32-inch wide doors for bathroom facilities shall be 2 or 2% of the total number in a building, whichever is larger, if such building meets the gross floor area criteria of the State Code. We recommend further that the 32-inch door-opening specification be applied to all doors (including closets) within dwelling units and sleeping rooms for the disabled. (See Figures 6 & 7)

(g) Door swing – Exit doors, corridor doors from rooms or spaces classified in high hazard occupancy group A, and corridor doors from rooms required to have more than one door under the provisions of section 603.1 shall swing in the direction of exit travel, except:

(1) Exterior street floor exit doors, other than those from interior stairs from buildings classified in occupancy groups J-2 and J-3.

(2) Doors from rooms of instruction in buildings classified in occupancy group G, having an occupant load of less than 75 persons.

Explanation: The fact that exit doors are to swing in the direction of exit travel is an important fire safety requirement for all building occupants, including the physically handicapped. Additionally, in vestibules the clearance between the arcs of door swings shall be at least 4 feet. A vestibule is an enclosed space, with doors or opening protectives, to provide protected passage between the exterior and interior


42" MINIMUM FOR 48" DOOR
33" MINIMUM FOR 36" DOOR
29" MINIMUM FOR 32" DOOR
WIDTH OF OPENING SHALL NOT BE REDUCED BY MORE THAN 3" FOR EACH 22" OF WIDTH

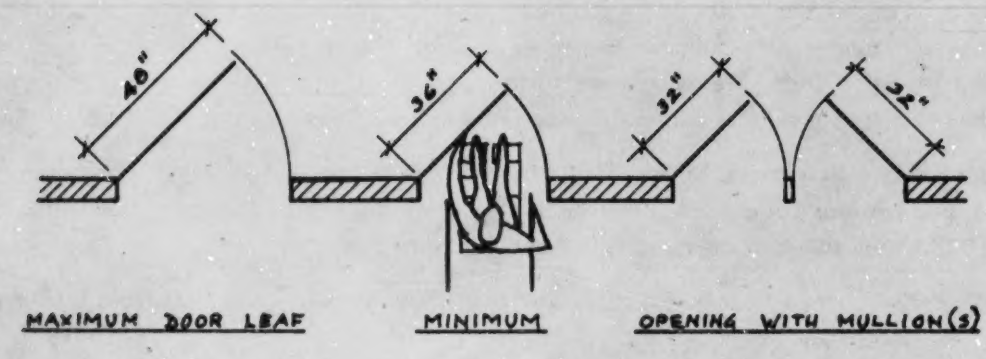
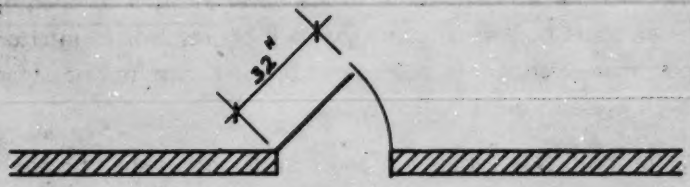
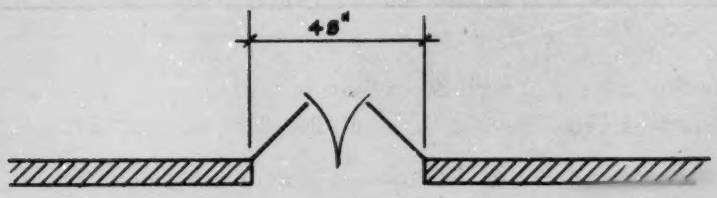


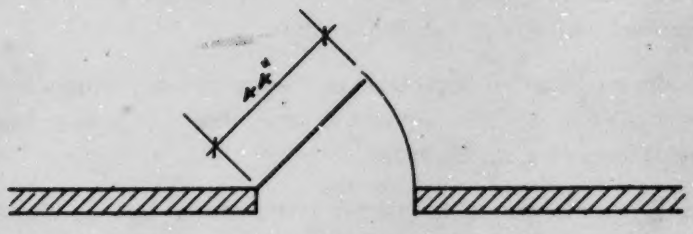
Figure 6. Required door-opening widths



- DOOR OPENINGS TO ALL HABITABLE AND OCCUPIABLE ROOMS.
- DOOR OPENINGS TO TOILET ROOMS IN BUILDINGS IN WHICH THE PUBLIC HAS FREE ACCESS.
- DOOR OPENINGS GIVING ACCESS TO AT LEAST ONE TOILET, LAVATORY AND BATHTUB OR SHOWER IN EACH DWELLING UNIT, IN BUILDINGS OR SPACES CLASSIFIED IN OCCUPANCY GROUP J-1 OR J-2, WHEN SUCH DWELLING UNIT IS ACCESSIBLE TO INDIVIDUALS IN WHEELCHAIRS.
- DOOR OPENINGS GIVING ACCESS TO ALL TOILETS, LAVATORIES AND BATHTUBS OR SHOWERS SERVING SINGLE ROOM OCCUPANCIES WHICH ARE ACCESSIBLE TO INDIVIDUALS IN WHEELCHAIRS.



- DOOR SWINGING IN PAIRS (NO MULLION)



- DOOR OPENINGS TO ROOMS USED BY BEDRIDDEN PATIENTS AND ALL SINGLE DOOR OPENINGS USED BY PATIENTS IN BUILDINGS CLASSIFIED OCCUPANCY GROUP H-2.

Figure 7. Required minimum nominal door widths

of a building, or between spaces within a building. A 4 foot clearance between exterior and interior doors allows the handicapped person sufficient room to maneuver in order to open doors. It is preferred that such exterior and interior doors be part of a straight path of travel; if an interior door is at a 90° angle from the exterior door, maneuvering into position to open an interior door (particularly if it opens in the direction of exit travel) presents great difficulty.

(h) Floor level – The floor on both sides of all exit and corridor doors shall be essentially level and at the same elevation for a distance, perpendicular to the door opening, at least equal to the width of the door leaf, except that where doors lead out of a building the level inside may be 7½ inches higher than the level outside.

Explanation: For instance, a 32-inch wide door leaf shall have a 32-inch essentially level distance on either side of the door opening itself. The 7½ inch height difference in level shall not apply to the one primary entrance to a building for the use of the disabled unless a walk provides building access. Door-opening thresholds shall be beveled and shall not exceed three quarters of an inch in height. Thresholds shall be flush for old-age and nursing homes for individuals who require physical assistance and for institutions for those with limited movement. Even a beveled ¾" threshold can present an obstacle to a wheelchair-using individual with severe upper extremity impairment. Flush thresholds are preferred whenever possible.

(i) Power-operated doors – Power operated doors or power-assisted manually operated doors, may be used as exit or corridor doors provided they remain closed in case of power failure but shall be manually operable. No power-operated door shall be credited as a required exit unless it swings in the direction of exit travel.

Explanation: We recommend the use of such doors because of the ease of access and egress which they offer for the physically handicapped. See also the prior discussion under C26-604.4(a).

(m) Revolving doors – Revolving doors shall not be used as exits in buildings classified in occupancy groups F-1 or F-2, G, or H; nor shall revolving doors be used in any occupancy as interior doors providing access to exits, at the foot of stairs, or at the head of basement stairs. Where revolving doors are used as exits, they shall comply with the following:

(1) They may provide not more than one unit of exit width for each revolving door and not more than 50 per cent of the required exit capacity at any location, provided that the revolving doors are located adjacent to, or within 20 ft., of swinging doors that provide the remaining required exit capacity at that location.

Explanation: Revolving doors are totally unacceptable as the one primary entrance for individuals in wheelchairs. If they are used in a building which is required to have wheelchair access, then the adjacent swinging door(s) shall provide access for the disabled.

(n) Turnstiles – No turnstile or other device designed to restrict travel shall be placed so as to obstruct any required exit, except that approved turnstiles that turn freely in the direction of exit travel may be used in any occupancy where revolving doors are permitted. Turnstiles shall be not more than 36 inches nor less than 30 inches high and shall be of such design as to provide 22 inches clear width as the turnstile rotates. Each turnstile may be credited with a capacity of one unit of exit width. Not more than 50 per cent of the required exit capacity may be provided at any location. The balance of the required exit capacity shall be provided by swinging doors located within 20 feet of the turnstiles. Turnstiles over 36 inches high shall meet the applicable requirements of this Code for revolving doors.

Explanation: Turnstiles are also unacceptable for building access by the handicapped. If used, they must be within 20 ft. of the primary wheelchair entrance if such access is required by this Code.

Finally, several other rules from the State Code are applicable. Door handles shall be not more than 42 inches above the floor and shall be of a type having a horizontal lever, a square or knurled knob, or otherwise arranged to permit easy operation. Doors opening into hazardous areas from the path of travel shall be equipped with door handles that are identifiable to visually handicapped persons as opening into hazardous areas. These areas include loading platforms, boiler rooms, stairways, fire escapes, etc. A generally accepted means of identifying doors leading to hazardous areas is the utilization of knurled door handles or knobs. For added discussion and illustration of minimum State Code requirements concerning doors, see pp. NYS 29-30 and NYS 63-65.

C26-604.10 Ramps

Interior or exterior ramps may be used as exits in lieu of interior or exterior stairs provided they comply with the applicable requirements for interior stairs in section C26-604.8 or exterior stairs in section C26-604.9 respectively, and with the following:

(a) Capacity – the capacity of ramps shall be as listed in Table 6-1.

(b) Maximum grade – Ramps shall not have a slope steeper than 1 in 8, except that in buildings classified in occupancy Group H the slope shall not exceed 1 in 12, and except as provided in article 8 for places of assembly.

Explanation: The State Code mandates a slope of not greater than 1 in 12 for ramps which are part of the path of travel for the physically handicapped. Also, according to provision C26-601.1.d of this Code, ramps used to comply with physically handicapped building access requirements "shall have a slope not greater than 1 in 12, and shall otherwise conform to the provisions" of this section. Thus, ramps used for the one primary wheelchair entrance in buildings which require such an entrance must have a slope not steeper than 1 in 12. Additional exterior ramps and interior ramps may have a slope steeper than 1 in 12 but never greater than 1 in 8. The requirements under article 8 for places of assembly mandate access to performance viewing positions for the wheelchair-user, and also require certain interior ramps to be not steeper than 1 in 12. See article 8 ahead for the applicable rules.

(c) Design

(1) CHANGES IN DIRECTION – Ramps shall be straight, with changes in direction being made at level platforms or landings, except that ramps having a slope not greater than 1 in 12 at any place, may be curved.

Explanation: For a change of direction exceeding 45 degrees, it is preferred to have a level platform. The State Code defines a ramp with a slope between 1 in 13 and 1 in 20 as a walk; thus, walks may be curved, but ramps (slope between 1 in 12 and 1 in 8) should be straight or equipped with level platforms where they change direction. (See Figure 8)

(2) LENGTH – The sloping portion of ramps shall be at least 3 ft. but not more than 30 ft. long between level platforms or landings.

Explanation: This provision is more restrictive than the State Code. Even if the slope of the ramp is between 1 in 13 and 1 in 20, the sloping portion may not be longer than 30 feet between level landings.

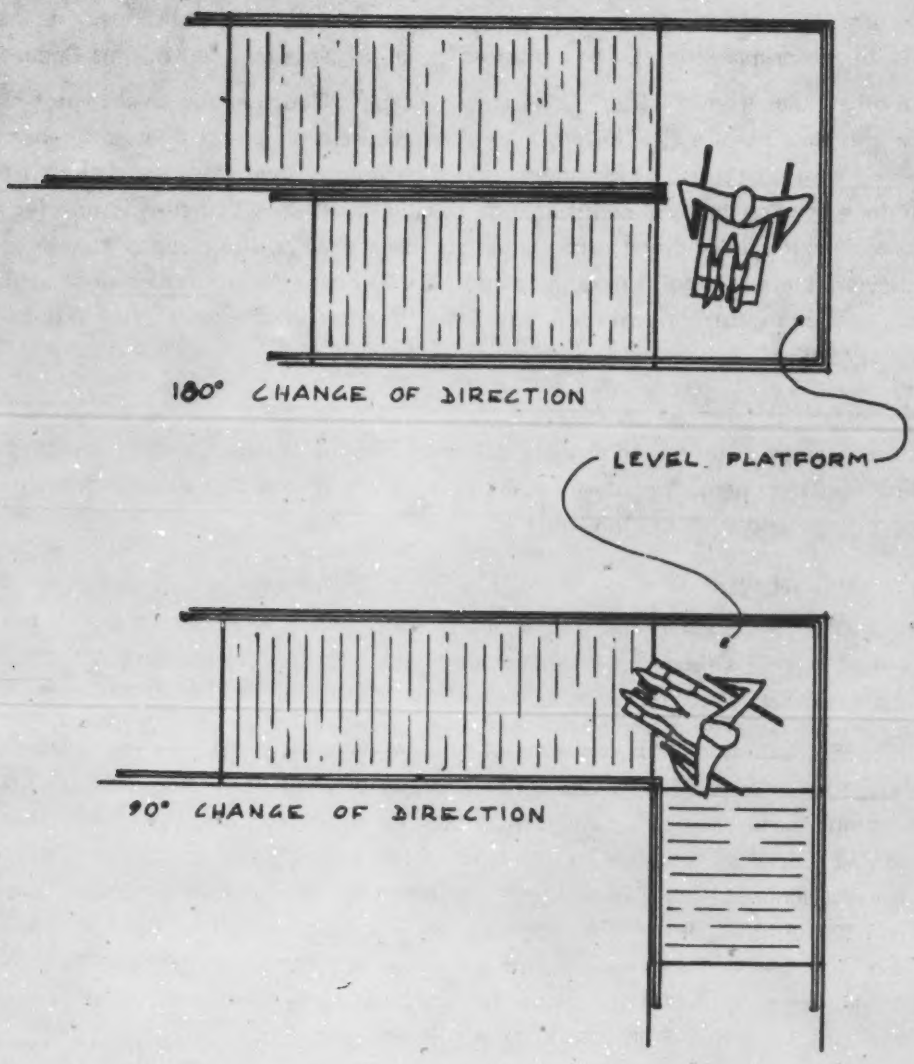


Figure 8. Ramp changes in direction

(3) PLATFORMS – Level platforms or landings, at least as wide as the ramps, shall be provided at the bottom, at intermediate levels where required, and at the top of all ramps. Level platforms shall be provided on each side of door openings into or from ramps, having a minimum length in the direction of exit travel of 3 ft., and when a door swings on the platform or landing a minimum length of 5 ft.

Explanation: Since this Code does not specify ramp widths, the requirements of the State Code are applicable: for buildings of group J-1 Residential and H-2 Institutional uses, ramps shall have a width of at least 48 inches, except that 36 inches is permitted where ramps and adjoining steps connect the same levels; for all other occupancy groups, ramps shall have a width of at least 36 inches provided the minimum clearance between handrails is 36 inches. We emphasize strongly that a clear distance of 36 inches between railings always be maintained; the ramp itself must be at least 36 inches wide, but in many cases it should be somewhat wider to provide anchorage for the handrails which must always be a minimum of 36 inches clear distance apart. A minimum ramp width of 3'6" is much more preferable and realistic

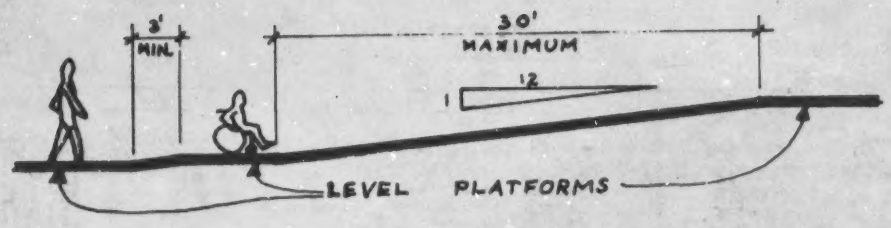


Figure 9. Required ramp platforms

than 3'0". Also, the State Code is more restrictive concerning intermediate level rest platforms; these must be at least 4 feet long. The State Code is more restrictive again concerning bottom and top platform length; whether or not a door opens on a ramp, bottom and top platforms must always be 4 feet long. However, the City Code is more restrictive in that the platform must be 5 feet long when a door swings into it. (See Figure 9)

(4) DOORS – Door openings into or from ramps shall comply with the requirements for stairs in section C26-604.8(g). No door shall swing over the sloping portion of a ramp.

Explanation: Section C26-604.8(g) follows (simply substitute the word "ramp" wherever the word "stair" occurs):

"Doors providing access to stairs shall comply with the requirements of sections C26-604.4(a) and C26-604.5(e). The swing of stair doors shall not block stairs or stair landings, nor shall any door at any point of its swing reduce the effective width of the landing or stair to less than 75 per cent of the required width of the landing or stair, or to less than the width of the door opening on them. The width of doors from a stair shall not be less than the number of units of exit width required for the capacity of the stair, but in no case shall the door width be less than required by section C26-604.4(e)." The width itself of the platform into which a door swings is crucial for the physically handicapped. The State Code says that where a door opens on a landing, there shall be a level area having a minimum dimension of 4 feet and extending at least one foot beyond the jamb on the latch side. The door shall not decrease the required dimension of a landing for any arc of its swing. Thus, the State Code is more restrictive since the area of the landing which is swept over as the door opens fully to ninety degrees is not to be considered as any part of the required 4-foot minimum dimension. This minimum dimension begins at the edge of the latch side of the door and extends to the platform edge. The one-foot dimension beyond the jamb on the latch side is very necessary to provide clearance for a wheelchair-confined person to approach and open a door without excessive back and forth maneuvering, and also minimizes the possibility of the wheelchair-user's tumbling from the chair as he leans forward to grasp the door handle. (See Figure 10)

(5) GUARDS AND RAILINGS – Guards and railings of ramps shall comply with the applicable requirements of section C26-604.8(f) except that only ramps having a slope steeper than 1 in 12 need comply with the requirements for handrails and intermediate handrails shall not be required.

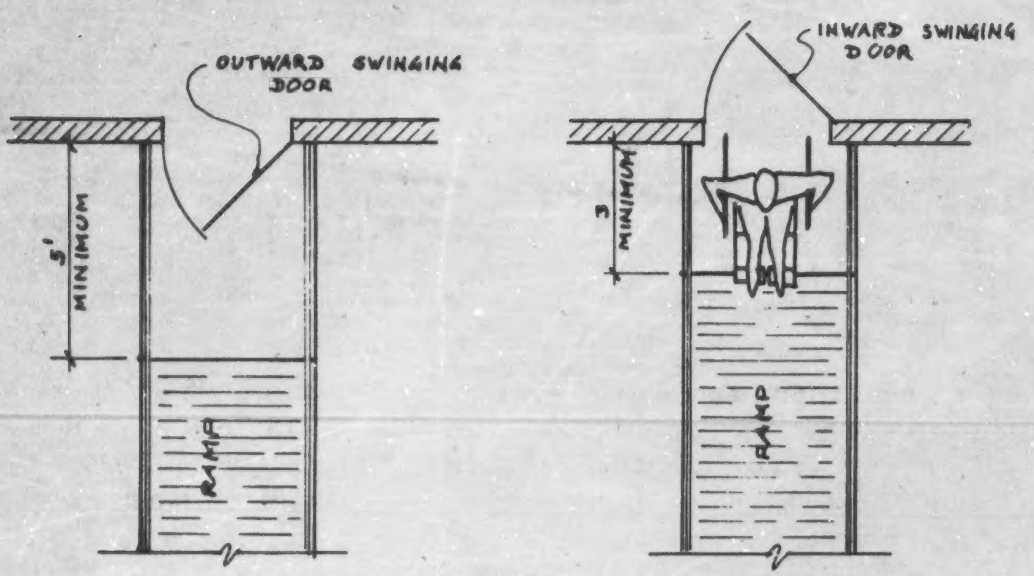


Figure 10. Doors opening into or from ramps

Explanation: Section C26-604.8(f) follows (again, substitute the word "ramp" wherever the word "stair" occurs):

"Stairs shall have walls, grilles, or guards at the sides and shall have handrails on both sides, except that stairs less than 44 inches wide may have a handrail on one side only. Handrails shall provide a finger clearance of 1½ inches, and shall project not more than 3½ inches into the required stair width.

"(2) The height of handrails above the nosing of treads shall be not more than 34 inches nor less than 30 inches.

(3) Handrails shall be returned to walls and posts when terminated, except in one and two-family dwellings.

(4) Handrails shall be designed to support loads in compliance with the requirements of article 9.

(5) Handrails in all stairs shall be of materials having a flame-spreading rating not exceeding 150."

The State Code requires handrails on both sides of a ramp regardless of ramp width. It further mandates that handrails shall extend at least one foot beyond the top and bottom of the ramp, but they shall be designed so that they do not constitute a hazard. These handrails are very helpful in assisting elderly or handicapped people who have difficulty negotiating an inclined surface. These railings also protect wheelchair-users from rolling off the ramp. The handrail extensions beyond the top and bottom of the ramp ease the transition from horizontal to inclined plane and vice versa. Handrail extensions should not project into any landings or walkways. Also, this Code states that only ramps "steeper than" 1 in 12 need have handrails. But, according to the State Code, a ramp of exactly 1 in 12 must have handrails; ramps of 1 in 13, 1 in 14, etc., need not comply. (See Figure 11)

(6) SURFACE -- Interior ramps exceeding a slope of 1 in 10 and all exterior ramps shall be provided with nonslip surfaces.

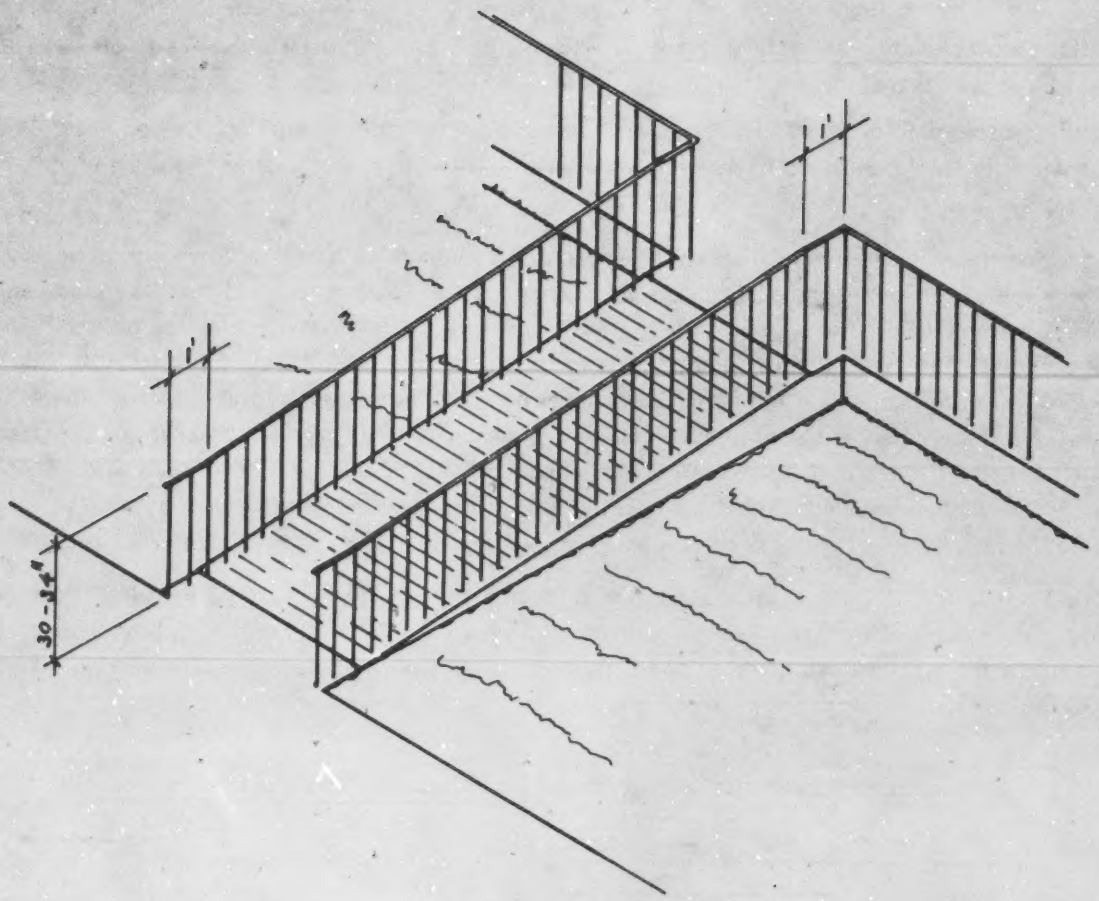


Figure 11. Ramp guardrails

C26-604.12 Moving Walkways

Pedestrian walkways consisting of conveyor belts shall be considered as exit passageways if level, or as ramps if inclined, and shall be acceptable as exits if they comply with the applicable requirements for exit passageways or ramps.

Explanation: Moving walkways are acceptable for the wheelchair-user but they might present difficulty for those who ambulate with crutches or for the blind. Ramps with textured surfaces are generally preferable for all physically handicapped. Other drawings and clarification of State Code standards for ramp design may be found on pp. NYS 21-25 and NYS 56-60.

Article 7

Special Uses and Occupancies

Part of this article refers to open parking structures and lots. There are no requirements for parking facilities for the physically handicapped in the City Code. Therefore, the following provisions of the State Code are required to be followed where parking facilities are provided:

"a. Where parking facilities are provided, at least two parking spaces or two per cent of the total number of parking spaces, whichever is greater, shall be reserved for the physically handicapped,

except that no facilities for the physically handicapped are required where the cumulative parking area is less than 2000 square feet.

"b. Parking spaces shall be at least 10 feet wide, except that a parking space adjoining a walkway shall be at least 9 feet wide.

c. Parking spaces shall be related to the path of travel so that the physically handicapped need not wheel or walk behind other parked cars, and so that the path of travel within the parking area is a minimum."

The above specifications are minimal acceptable dimensions for parking spaces and would restrict the mobility of some physically handicapped persons. Parking spaces 12 feet wide (11 feet where one adjoins a walkway) are preferred. The best possible location for a parking space reserved for the physically handicapped is adjoining the path of travel and as close to the building as possible; in no case shall this distance exceed 200 feet. Unfortunately, the State Code makes no provision as to how these reserved spaces shall be indicated and identified as being set aside for the handicapped. We feel that an above-grade sign should be erected at each of these parking spaces clearly indicating that this space has been reserved for those who are physically handicapped. These signs should also incorporate the International Symbol of Accessibility somewhere in their design. For appropriate illustration see pp. NYS 28 and NYS 62-63.

Also, 2000 square feet of parking area is perhaps room enough for between 5 and 9 vehicles, depending on the layout of the parking area. The following table shows the minimum number of spaces which must be reserved for the handicapped based on the total number of parking spaces in a given parking lot of over 2000 square feet.

TABLE A

Total Number of Parking Spaces		Minimum Number of Spaces Reserved for Handicapped
From	To	
Less Than	124	2
125	174	3
175	224	4
225	274	5
275	324	6
325	374	7
375	424	8
425	474	9
475	524	10
525	574	11
575	624	12
625	674	13
675	724	14
725	774	15
775	824	16
825	874	17
875	924	18
925	974	19
975	1024	20

C26-801.7 Seating in Assembly Spaces

(h) Performance viewing positions shall be provided for wheelchair persons in accordance with the following schedule. These positions shall be located so as not to interfere with egress from any row of seats and shall be reachable by means of ramps and/or elevators. Steps shall not be allowed in line of travel from the main approach entry to the designated locations.

Capacity of Assembly Space	Number of Viewing Positions
75 to 500	Minimum 2
501 to 1000	Minimum 3
1001 to 1500	Minimum 4
over 1500 — minimum 4 plus 1 for each 400 over 1500	

Explanation: Design and space requirements for performance-viewing positions are mandated by the State Code. (For added clarification and illustration, refer to pp. NYS 48-NYS 50.) The following table extends the above schedule for viewing positions to a capacity of 9900.

TABLE B

Capacity of Assembly Space		Minimum Number of Viewing Positions
From	To	Number
1501	1900	5
1901	2300	6
2301	2700	7
2701	3100	8
3101	3500	9
3501	3900	10
3901	4300	11
4301	4700	12
4701	5100	13
5101	5500	14
5501	5900	15
5901	6300	16
6301	6700	17
6701	7100	18
7101	7500	19
7501	7900	20
7901	8300	21
8301	8700	22
8701	9100	23
9101	9500	24
9501	9900	25

Additionally, there are significant differences between the City and State Codes concerning physically handicapped space requirements and performance-viewing positions in Assembly occupancies. For the City Code, buildings must comply with article 8 for Assembly structures "when such occupancies are enclosed and contain 75 or more persons or are outdoor spaces and contain 200 or more persons" (C26-307.1.a). Facilities for the physically handicapped, then, would be required for Assembly occupancies meeting the above criteria and according to the above schedule for viewing positions. On the other hand, the State Code requires facilities for the physically handicapped if the cumulative gross floor area in Assembly occupancies excees 5000 square feet (except places of Education where facilities are required in all cases). If an Assembly occupancy meets this requirement, then 2 viewing positions or 2% of the total number of such positions must be provided for the physically handicapped. In terms of determing the number of wheelchair viewing positions, the State schedule is a more restrictive than the City counterpart; for example, an occupancy with a seating capacity of 9900 would require 25 viewing positions under theCity formula but 198 such positions under the State requirement. Furthermore, the determination of which Code is more restrictive in its requirements for facilities for the handicapped in Assembly uses must be an individual decision for each newly constructed buiiding; it is more likely that the City Code is more restrictive since a seating capacity of 75 (indoor) would require less than 5000 square feet, but it is also possible that a 5000 square foot Assembly space would not have a seating capacity of 75 or more (or 200 for an outdoor space). Thus, we recommend the following: since portable seating can be employed when wheelchair viewing positions are unoccupied, that the 2% State Code requirement be complied with in the City of New York; and that the provisions of both Codes (75 seating indoor or 200 seating outdoor for the City Code versus 5000 square feet of space for the State Code) be considered for determining which Assembly occupancies must have facilities for the disabled – facilities should be required if either one of these provisions is met.

C26-801.8 Aisle and Cross Aisles

(2) MINIMUM WIDTH – Aisles and cross aisles shall have a minimum width of 44 inches except that the width may be at least 36 inches under any one or more of the following conditions:

a. In any assembly space having a total of not more than 300 occupants.

b. When not more than the number of persons permitted for one unit of exit width is served.

c. At the narrowest point when a tapered aisle is permitted under (3) below.

d. When an aisle parallels and is alongside an enclosure wall or partition that is provided with exit doors spaced not more than 16 ft. on centers, provided such aisle serves only the rows of seats adjacent to it.

(3) TAPERED AISLES – Tapered aisles shall be used where egress is provided only at one end of the aisle, except that uniform aisles may be used when their width for the entire length will accommodate 80 per cent of the total occupant load served by the aisle. Tapered aisles shall be widened gradually so that their width to the point of discharge provides for the entire occupant load of the aisle.

Explanation: Although a 36-inch-wide aisle would not prevent access or usability for most physically disabled, it might inhibit it; we recommend that the 44-inch minimum aisle width be adhered to if feasible regardless of the Assembly space seating capacity. (See Figure 12)

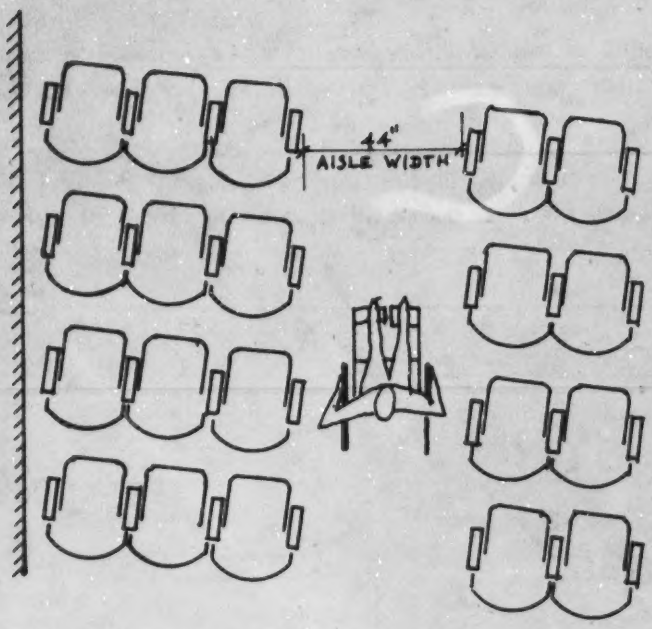


Figure 12. Minimum assembly aisle width

TABLE 8-1. DETERMINATION OF EXIT AND ACCESS REQUIREMENTS

Occupancy Group Classification	Maximum Travel Distance Within Assembly Space (ft.)[a]		Capacity (number of persons per unit of width)				
				Doors or Openings			
	Primary	Secondary	Aisle and Cross Aisle[e]	From Assembly Space	From Safe Area	Stairs and Escalators	Ramps, Corridors, Safe Areas, Exit Passageways
F-1a[b]	85	125	80	50	100	60	80
F-1b[c]	100	125	90	80	125	80	100
F-2	175	250	400	400	500	320	425
F-3	100[d]	125[d]	90	80	125	80	100
F-4	85[d]	125[d]	80	50	100	60	80

Notes:

[a] See Section C26-801.9. When an exit opening from an assembly space discharges into corridor that does not meet the requirements of this code for a safe area, the travel distance shall include the distance within the corridor to an exit.

[b] See Section C26-802.2(b) (4) for stages.

[c] See Section C26-802.3(b) (3) for stages

[d] In places of assembly completely equipped with automatic sprinklers, this distance may be increased 50 per cent.

[e] See Section C26-801.8.

C26-801.10 Exit Openings

(b) Width – Exit openings shall be at least 36 inches wide for single doors and at least 66 inches but not more than 88 inches for doors swinging in pairs, except that in assembly spaces having an occupant load of over 300 persons, single door openings shall be at least 44 inches wide.

Explanation: These dimensions are generous, increasing ease of access for the physically handicapped to Assembly spaces. Where doors swing in pairs, access will be easier and safer for all if mullions are not used. (See Figure 13)

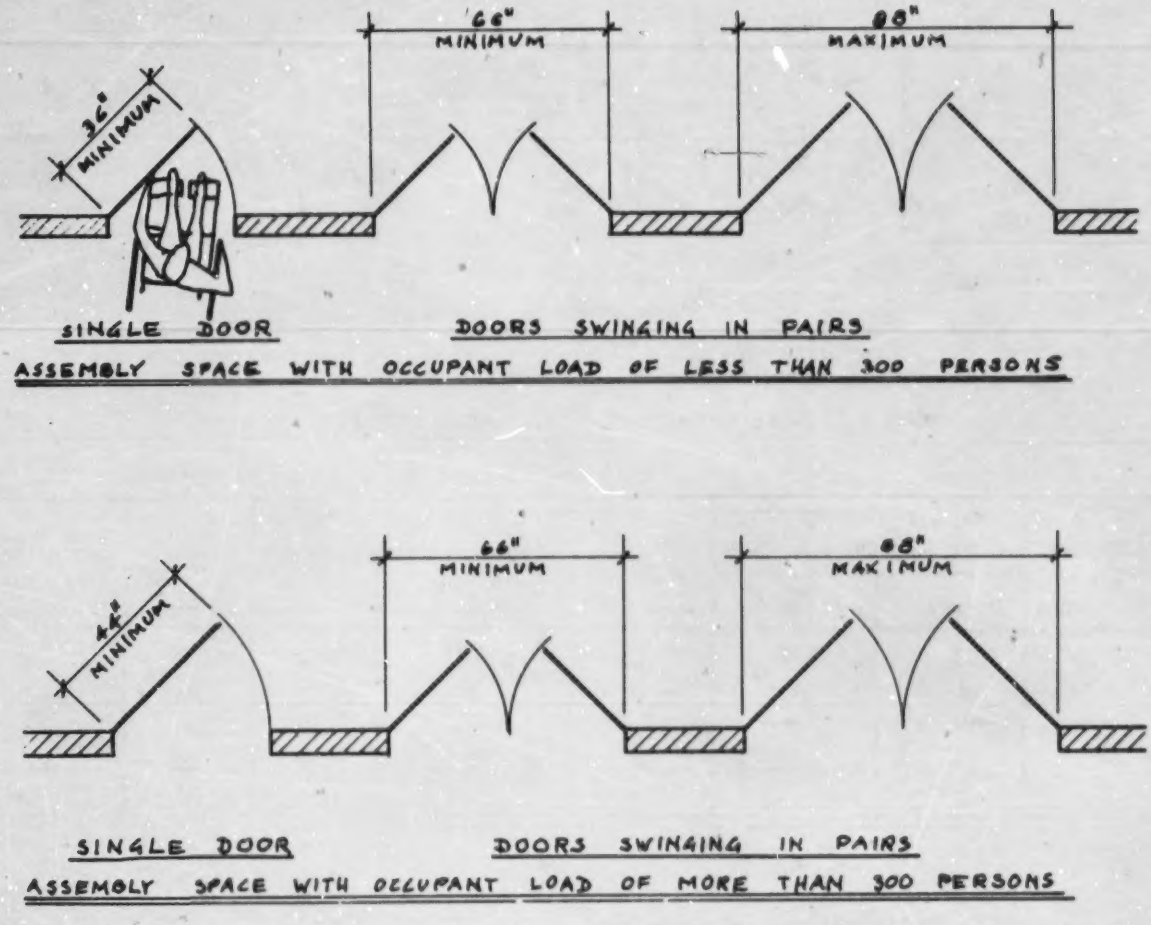


Figure 13. Assembly exit opening widths

C26-801.11 Safe Areas

(5) RAMPS AND STEPS – Ramps in safe areas shall have a gradient of not more than 1 in 12, except that when not exceeding 6 ft. in length, the gradient may be not greater than 1 in 10.

C26-801.12 Corridors

Corridors shall comply with all of the requirements of article 6, except as modified below:

(b) Changes in level – Changes in level requiring less than three risers in a corridor shall be by a ramp having a slope no greater than 1 in 10.

C26-801.13 Exit Passageways

Exit passageways shall comply with all of the requirements of article 6, except as modified below:

(b) Changes in level – Changes in level requiring less than three risers in an exit passageway shall be by a ramp having a slope not greater than 1 in 10.

C26-801.14 Vertical Exits

Stairs, escalators, and ramps shall comply with all of the requirements of article 6, except as modified below:

(d) Ramp slope – Ramps serving as vertical exits shall not have a slope greater than 1 in 10.

Explanation: Again, we recommend that 1 in 12 ramps be provided wherever possible since ramps of a steeper grade become more difficult to negotiate. A 1 in 10 ramp is also required in corridors and exit passageways where changes in level of less than 24¾ inches occur. Steps may be used for changes in level greater than three risers; however, it must be remembered that wheelchair viewing positions must be reachable at all times through walks, ramps, or elevators.

Article 12

Light, Heat, Ventilation and Noise Control

Sub-Article 1204.0 Standards of Heating

C26-1204.1 Heating Requirements

All habitable or occupiable rooms or spaces, and all other rooms or spaces listed in Table 12-1, shall be provided with means of heating in accordance with the requirements of this article and reference standard RS 12-1. Heating systems shall be capable of producing the required temperatures listed in Table 12-1 when the outdoor temperature is 5° F and the wind velocity is 15 m.p.h.

Explanation: Table 12-1 mandates a minimum temperature for "habitable rooms in all buildings" of 70° F. While this minimum temperature is acceptable for occupancies other than those whose primary use is permanent or transient residency, a minimum temperature of 75° F should be the capability in all multiple dwelling units and sleeping rooms (J-1 and J-2 occupancies) for the handicapped as mandated in the State Code. Also, the following minimum requirements of the State Code apply for cooking and electrical equipment in dwelling units and sleeping rooms for the disabled:

a – Cooking equipment of the electric type shall be equipped with a lamp or lamps that will light automatically when a burner is in operation.

b – Cooking equipment of the gas type shall be equipped with pilot lights for the top burner and for the oven. An automatic device shall shut off the oven gas supply in the event of pilot outage.

c – Controls on cooking equipment shall be located so that they can be operated without reaching over or between burners.

d – Electrical receptacles shall be located at least 24 inches above the floor.

e – Where the length of a passageway within a dwelling unit exceeds 15 feet, the lighting fixtures in the passageway shall be controlled by switches of the three-way type.

Additionally, the placement of controls which regulate light, heat, and ventilating equipment is critical for the handicapped. Such controls should be arranged so as to provide convenient access and to permit the maximum use for living and working. The preferred height for the placement of such items as thermostat controls, air conditioning controls, and electrical switches intended for the use of the physically handicapped is not more than 48 inches above floor level. For further discussion of the above State Code requirements, see pp. NYS 32 - NYS 33.

Article 16
Plumbing and Gas Piping

C26-1600.6 General Requirements

(n) Location of Fixtures

(3) Accessibility – Plumbing fixtures shall be located so that they are readily accessible to the users.

Explanation: Although this is a general provision covering plumbing fixtures for all building occupants, much care must be directed to the placement of all toilet and bath facilities for the physically handicapped. Further on, this Code mandates the specific placement of such major plumbing facilities as water closets, grab bars, and drinking fountains for the physically handicapped; however, the location of other fixtures in a toilet room is equally important. A height of 40 inches from the floor is preferred for the lower edge of mirrors, shelves, towel racks, disposal units, towel and sanitary napkin dispensers, etc.

Reference Standard 16

Section P104.0 Plumbing Fixtures

P104.1 Requirements

(b) Facilities for each sex – where public toilet or bathing facilities are designed for use by more than one person at a time, separate facilities shall be installed for each sex.

Explanation: Since this provision extends to public toilet or bathing facilities for the physically handicapped as well, it is more restrictive than the State Code. The State does not specifically mandate separate facilities for each sex in semi-private or central bath facilities whereas through the wording of this provision, the City Code does. The State Code does mandate separate facilities for each sex in public toilet rooms.

(c) Facilities for the physically handicapped – In every building where public toilet facilities are provided there shall be at least one water closet stall which is accessible to the physically handicapped, at least 3 ft. wide by 5 ft. in depth having a door (if used) that is 32 inches wide and swings out to accommodate a wheelchair. The water closet seat in this one stall shall be set 20 inches above the floor. The stall shall be provided

with grab bars on each side, the grab bars shall have an outside diameter of 1½ in., and shall be 33 in. above and parallel to the floor with 1½ inches clearance from the wall. One drinking fountain facility not of the recessed type, set 30 inches above the floor, shall also be provided. (Figures 14 and 15)

Explanation: We recommend that if a door is used on a water closet stall for the physically handicapped, a depth of 5 ft., 6 in. be provided for. This is a State Code requirement. Drinking fountains should have basins projecting 8 inches to 12 inches from the front of the wall or cabinet on which they are mounted. Such drinking fountains should have up-front jets and controls and should be designed for hand operation or hand-and-foot operation.

Furthermore, there are many significant provisions contained in the State Code concerning both the determination of numbers and the usability of plumbing fixtures for the physically handicapped which must be noted. Public buildings requiring facilities for the disabled include accessory public and recreational spaces for Residential occupancies; thus if public toilet rooms are provided for such public spaces, one toilet room for each sex shall contain at least one water closet and one lavatory for the physically handicapped, and one drinking fountain for the disabled is required if public drinking fountains are provided. It should also be emphasized that the New York State Code requires as a minimum a water closet and a lavatory for the disabled in at least one public toilet room for each sex in every Business, Mercantile, and Low Hazard Industrial occupancy larger than 50,000 square feet, and in most Assembly occupancies larger than 5,000 square feet. The State Code further requires plumbing facilities for the handicapped in all Education occupancies regardless of size; specifically, a water closet and a lavatory are required for staff in each building, and a water closet and a lavatory for pupils must be provided for each story or floor level.

Table C which follows provides at a glance the number and kinds of plumbing facilities for the handicapped required by the State Code in occupancies containing living units and/or sleeping rooms. The percentages and plumbing fixtures required are taken directly form State Code tables; the occupancy designations are those used within the City Code.

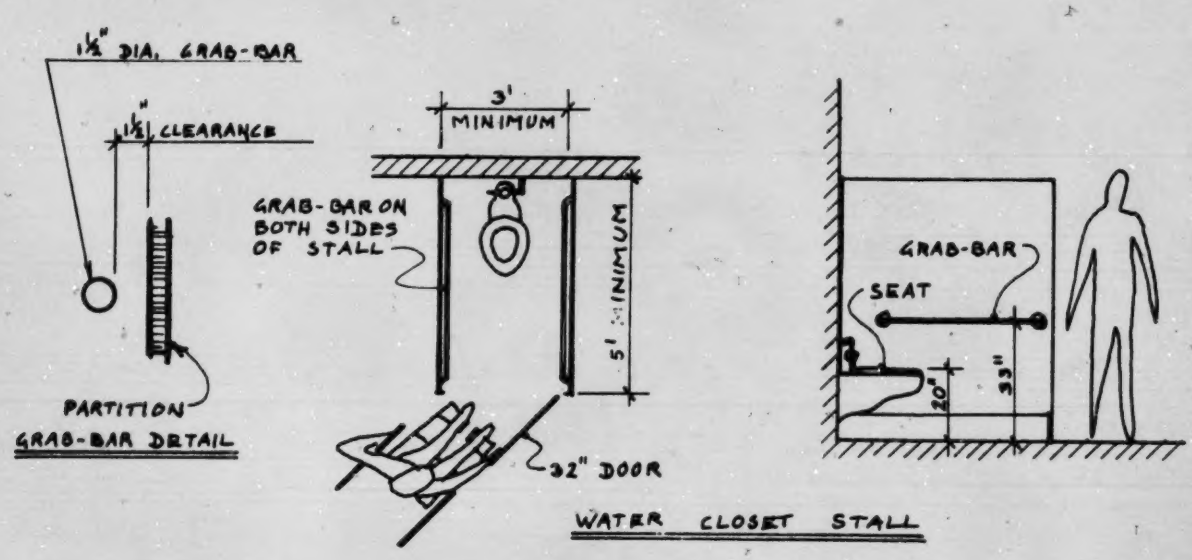


Figure 14. Water closet stall for the physically handicapped

Figure 15. Drinking fountain for the physically handicapped

TABLE C

REQUIRED NUMBER OF TOILET AND BATH FACILITIES

Occupancy Group	Percentage of Dwelling Units or Sleeping Rooms	Plumbing Fixtures Required
J-2 Residential	2%	A water closet, a lavatory, and a shower stall or bathtub in each.
J-1 Residential with private toilet and bath facilities	2%	A water closet, a lavatory, and a shower stall or bathtub for each.
J-1 Residential with semi-private or central facilities	2%	A water closet and a lavatory for each multiple of two sleeping rooms, and a shower stall or bathtub for each multiple of six sleeping rooms, or fraction thereof.
H-2 Institutional with private facilities	10%	A water closet, a lavatory, and a shower stall or bathtub for each.
H-2 Institutional with semi-private or central facilities	10%	A water closet and a lavatory for each multiple of two sleeping rooms, and a shower stall or bathtub for each multiple of six sleeping rooms, or fraction thereof.

In addition to the above requirements, the following rules from the State Code provide precise specifications for making plumbing facilities usable by the physically handicapped. Although they are not contained in the City Code, these reules exist nevertheless as minimum requirements which must be enforced by City officials and inspectors:

a – Adequate clear floor space shall be provided for access to, and safe use of plumbing fixtures for the physically handicapped. A clear floor space of at least 5 feet by 5 feet shall be available for turning a wheelchair in general toilet rooms, general bathrooms and general laundry rooms equipped with fixtures for the physically handicapped.

b – Faucet and operating levers at plumbing fixtures for the physically handicapped shall be of wristblade or other suitable type not requiring the use of the hand for operation. Self-closing lavatory faucets shall be prohibited.

c – Where provided for the physically handicapped, wall mounted and pedestal urinals shall be installed so that rim levels are no more than 21 inches above floor level; floor set stall urinals shall be installed so that rim level is no higher than the toilet room floor level.

d – Lavatories and kitchen sinks for the physically handicapped shall have at least 26 inches clearance between fixture bottom and floor for a depth of 10 inches so as to provide sufficient leg room, and the piping beneath the fixture shall be located or insulated so as to prevent injury to persons in wheelchairs.

e – Where bathtubs are provided for the physically handicapped, grab bars 1¼ inches in diameter shall be securely mounted on two adjacent walls of the tub or its enclosure, one bar installed horizontally 32 inches above the floor and the second bar installed vertically with its lower end at such height.

f – Shower stalls for the physically handicapped shall have non-slip type floors, adjustable type shower heads, and single-lever mixing valves designed to maintain constant water temperature under variable water pressure and temperature conditions. Mixing valves shall be installed approximately 40 inches above the stall floor and shall be operable from inside and outside the stall by a user at the threshold. Where such shower stalls are provided in dwelling units for the physically handicapped, grab bars 1¼ inches in diameter shall be securely mounted on two adjacent walls of the stall, one bar installed vertically with its lower end 32 inches above the floor. Where cental bath facilities are provided for the physically handicapped in Residential occupancies, a shower stall shall have at least 9 square feet of floor area, with minimum horizontal dimension of 3 feet, and a curb not exceeding 2 inches in height at the stall entrance. Where central bath facilities are provided for the physically handicapped in Institutional occupancies, a shower stall for the physically handicapped shall have at least 16 square feet of floor area, with minimum horizontal dimension of 4 feet, and a threshold not exceeding one-half inch in height at the stall entrance. Where such shower stalls are provided in central bath facilities, they shall be equipped with a folding seat securely attached to a sidewall of the stall, opposite the mixing valve, and installed so that the top of the seat when in the lowered position shall be 19 to 20 inches above the stall floor. Horizontal handrails 1¼ inches in diameter shall be secureiy mounted 32 inches above the floor on the rear wall and on the wall opposite the seat. Handrails and grab bars shall provide at least 1½ inches of clearance from walls.

g – Where laundry facilities for the physically handicapped are provided in a general laundry room, at least one laundry machine therein shall be of the front-loading type equipped with a side-hinged front door and front-mounted controls. (For more explanation and illustration of State Code minimum requirements concerning plumbing facilities, refer to pp. NYS 31-39, NYS 65-73).

(d) Accessibility – The fixtures specified in Table RS 16-5 for public buildings shall be located not more than one floor below the floor occupied by the people for whose use the fixtures are intended, unless elevator service is avilable, except that in buildings classified in occupancy group E which are accessible to the physically handicapped, there shall be at least one such toilet stall for male and one for female for every 300 occupants of each sex in the building.

Explanation: The wording of this requirement suggests that if elevator service is available, plumbing fixtures for the physically handicapped may be located on any floor of a building; and if elevator service is unavailable, plumbing fixtures may not be located more than one floor above or below the floor used by the physically handicapped. Initially, if elevator service is available in a building, the physically handicapped should not be required to travel more than two stories in any direction to reach plumbing fixtures, according to the State Code. Furthermore, since many physically handicapped are confined to wheelchairs,

It is illogical to locate plumbing fixtures intended for their use either one floor below or above the level used if elevator service is unavailable. Such plumbing fixtures would be unusable by those confined to wheelchairs. We recommend emphatically that if elevator service is not available, plumbing fixtures for the physically handicapped should be located on the same level used by these persons.

Telephones

Explanation: There are no provisions in the City Code for public telephones for the physically handicapped; however, the State Code incorporates the following rules which serve as a minimum requirement governing public telephones for the disabled:

a – Where public telephones are provided on the premises, at least one public telephone shall be suitable for the physically handicapped.

b – Where a telephone for private use is not available within the building, at least one public telephone, suitable for the physically handicapped, shall be provided within the path of travel.

For clarification and illustration of these provisions, see pp. NYS 39-40 and NYS 73.

CHAPTER 656

An Act to amend the public buildings law and the executive law, in relation to making public buildings and facilities accessible to physically handicapped persons.

Approved May 31, 1972, effective Sept. 1, 1972.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. The public buildings law is hereby amended by adding thereto a new article, to be article four-A, to read as follows:

ARTICLE 4–A – CONSTRUCTION OF PUBLIC BUILDINGS TO PROVIDE ACCESS AND USE BY THE PHYSICALLY HANDICAPPED

Section

50. Definitions.
51. Construction of public buildings.
52. Compliance.

§ 50. Definitions

As used in this article

1. "Public building" means any building or portion thereof, other than a privately owned residential structure, public housing structure, police, fire or correction structure, constructed wholly or partially with state or municipal funds, whether tax funds, funds obtained through bond issues or grants or loans under any state law, which is likely to be used by physically handicapped persons, including, but not limited to theaters, concert halls, auditoriums, museums, schools, libraries, recreation facilities, transportation terminals and stations, factories, office buildings and business establishments.

2. "State" shall mean the state of New York and any state board, bureau, commission, department, authority, division, officer or public benefit corporation.

3. "Municipality" or "Municipal" means a city, town, county, village, school district or special district as defined by section one hundred two of the real property tax law.

4. "Facilities" shall mean and include those facilities as defined in the provisions of the state building construction code relating to facilities for the physically handicapped.

5. "Physically handicapped" means

(a) impairment requiring confinement to a wheelchair; or

(b) impairment causing difficulty or insecurity in walking or climbing stairs or requiring the use of braces, crutches or other artificial supports; or impairment caused by amputation, arthritis, spastic condition or pulmonary, cardiac or other ills rendering the individual semi-ambulatory: or

(c) total or partial impairment of hearing or sight causing insecurity or likelihood of exposure to danger in public places; or

(d) impairment due to conditions of aging and incoordination.

§ 51. Construction of public buildings

In addition to any other requirements respecting the construction of a public building and facilities thereof, all such buildings and facilities shall conform to the requirements of the state building construction

code relating to facilities for the physically handicapped, except those buildings already constructed, in the process of being constructed or for which schematic designs have been approved by the effective date of this act.

§ 52. Compliance

The official, governing body or board having design approval authority for state or municipal building construction shall determine whether a proposed structure is a "public building" within the meaning of this article and shall ensure that the design of any such building complies with the requirements hereby imposed.

§ 2. Articles fourteen and four of such law are hereby renumbered to be articles five and six, respectively.

§ 3. Section three hundred seventy-four-A of the executive law is hereby amended by adding thereto a new subdivision, to be subdivision four, to read as follows:

4. Notwithstanding the other provisions of this section, the provisions of the state building construction code relating to the physically handicapped shall be applicable to all municipalities in relation to public buildings as defined in subdivision one of section fifty of the public buildings law, except those buildings already constructed, in the process of being constructed or for which schematic designs have been approved by the effective date of this act.

§ 4. This act shall take effect on September first, nineteen hundred seventy-two.

LAWS OF NEW YORK – 1974

PUBLIC BUILDINGS – CONSTRUCTION – PHYSICALLY HANDICAPPED – FACILITIES –

CHAPTER 449

An Act to amend the executive law and the public building law, in relation to construction which must comply with the state building construction code on facilities for the physically handicapped.

Approved and effective May 23, 1974.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Subdivision four of section three hundred seventy-four-A of the executive law, as added by chapter six hundred fifty-six of the laws of nineteen hundred seventy-two, is hereby amended to read as follows:

4. Notwithstanding the other provisions of this section, the provisions of the state building construction code relating to the physically handicapped shall be applicable to all municipalities in relation to the new construction, reconstruction, rehabilitation, alteration or improvement of public buildings, as defined in subdivision one of section fifty of the public buildings law, except work already completed, work in progress, or work for which schematic designs have been approved by the effective date of this act. This subdivision shall not be effective if its provision will impair the structural stability of the public building or its facilities

§ 2. Section fifty-one of the public buildings law, as added by chapter six hundred fifty-six of the laws of nineteen seventy-two is hereby amended to read as follows:

§ 51. Construction of public buildings

In addition to any other requirements respecting the construction of a public building and facilities thereof, the new construction, reconstruction, rehabilitation, alteration or improvement of all such buidl-buildings and facilities shall conform to the requirements of the state building construction code relating to facilities for the physically handicapped, except work already completed, work in progress, or work for which schematic designs have been approved by the effective date of this act. This section shall not be effective if its provisions will impair the structural stability of the public building or its facilities.

§ 3. Section fifty of such law is hereby amended by adding thereto a new subdivision, to be subdivision six, to read as follows:

6. "Reconstruction, rehabilitation, alteration or improvement" shall mean only that work which results in a substantial change in the structure or facilities of a public building and shall not include minor repairs necessary for ordinary maintenance.

§ 4. This act shall take effect immediately.

Explanation: Taken together, these New York State laws are similar in substance to the statute regulating handicapped accessibility to public building construction on the Federal level – PL 90-480. Any public building, as defined in the above laws, constructed or altered by the State or a municipality within the State must provide facilities for the physically handicapped. Also, any public building constructed or altered through the assistance of State or municipal funds, as defined in the above laws, must provide facilities for the physically handicapped. These facilities shall conform to the requirements of the State Building Construction Code regarding facilities for the physically handicapped. There are no minimum square foot requirements for determining accessibility for the physically handicapped in public buildings; all public buildings, regardless of cumulative gross floor area, shall provide facilities for the physically handicapped.

LAWS OF NEW YORK – 1975

HANDICAPPED PERSONS – STREETS – CURB RAMPS – CONSTRUCTION

CHAPTER 248

An Act to amend the highway law, in relation to requiring ramps for handicapped persons in the construction of street curbing.

Approved June 17, 1975, effective January 1, 1976

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. The highway law is hereby amended by adding thereto a new section, to be section three hundred thirty, to read as follows:

§ 330. Ramps for handicapped in street curbing

No public street or highway shall be constructed or reconstructed unless the curbing thereof is designed and constructed so as to allow reasonable access to pedestrian crosswalks for physically handicapped persons. The commissioner shall by regulation set standards and provide design specifications necessary for carrying out the provisions of this section.

§ 2. This act shall take effect on the first day of January succeeding the date on which it shall have become a law.

Explanation: The following Rules and Regulations for the construction of curbing for Physically Handicapped Persons are to be followed on all highway construction projects awarded on or after January 1, 1976. You will also note that the Rules and Regulations apply to all political subdivisions in the State. Also, reprinted herein is Appendix A-14, which provides three alternative sidewalk ramp designs.

Pursuant to Section 330 of the Highway Law, as added by Chapter 248 of the Laws of 1975, the Commissioner of Transportation does hereby add a new Subchapter D and a new Part 170 to Title 17 of the Official Compilation of Codes, Rules and Regulations of the State of New York to take effect January 1, 1976 and to read as follows:

Subchapter D Highway Construction

Part 170

CONSTRUCTION OF CURBING FOR PHYSICALLY HANDICAPPED PERSONS

Sec.

170.1 Authority
170.2 General
170.3 Description

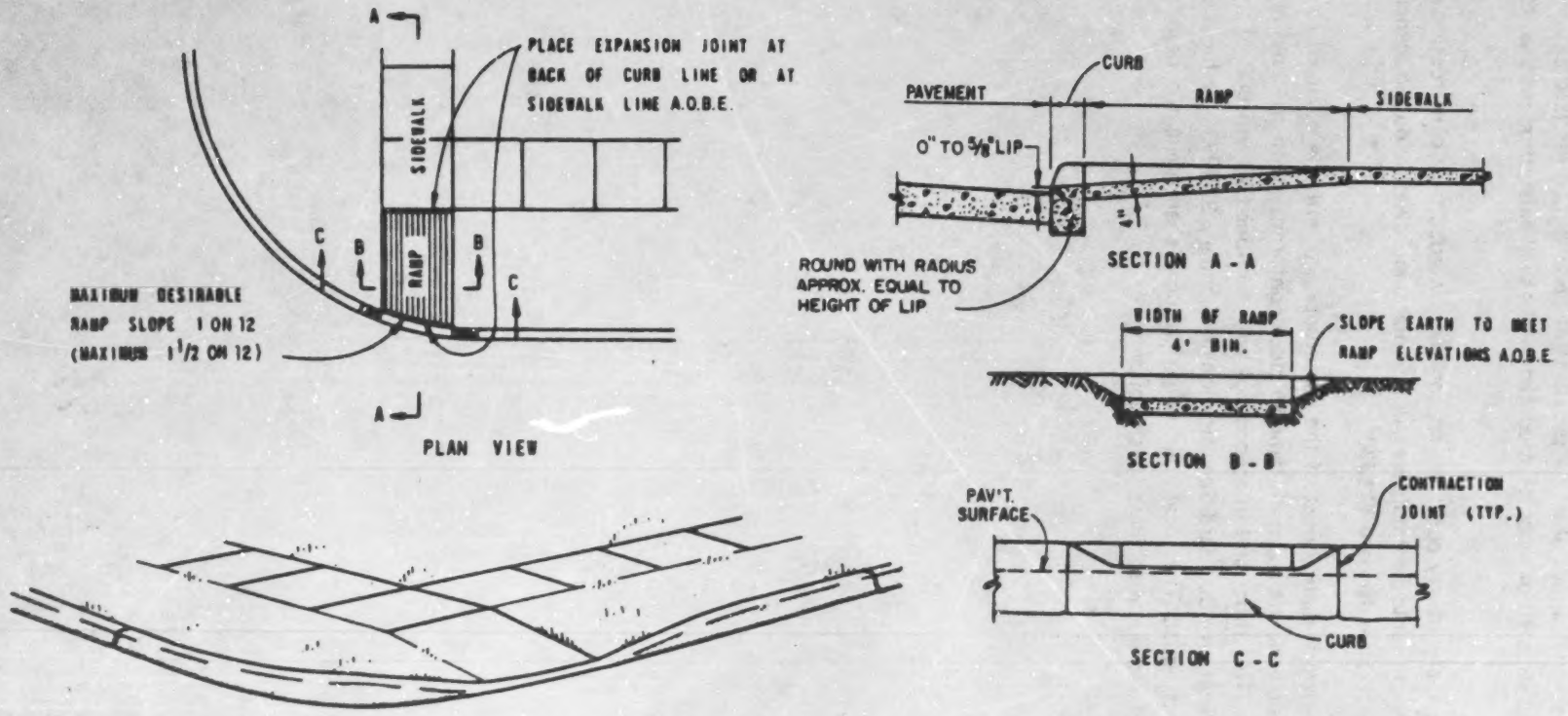
Section 170.1 Authority. Section 330 of the Highway Law requires the Department of Transportation to set standards and provide design specifications for the construction of street curbing to allow reasonable access to pedestrian crosswalks for physically handicapped persons.

170.2 General. (a) The curbing adjacent to sidewalks of every public street and highway constructed or reconstructed with such curbing within New York State shall be constructed or reconstructed in accordance with this Part.

(b) Ramps for the handicapped shall be provided at each curbed intersection and mid-block crosswalk where curbs are constructed or reconstructed. Sidewalks shall exist or be planned to exist for this Part to apply.

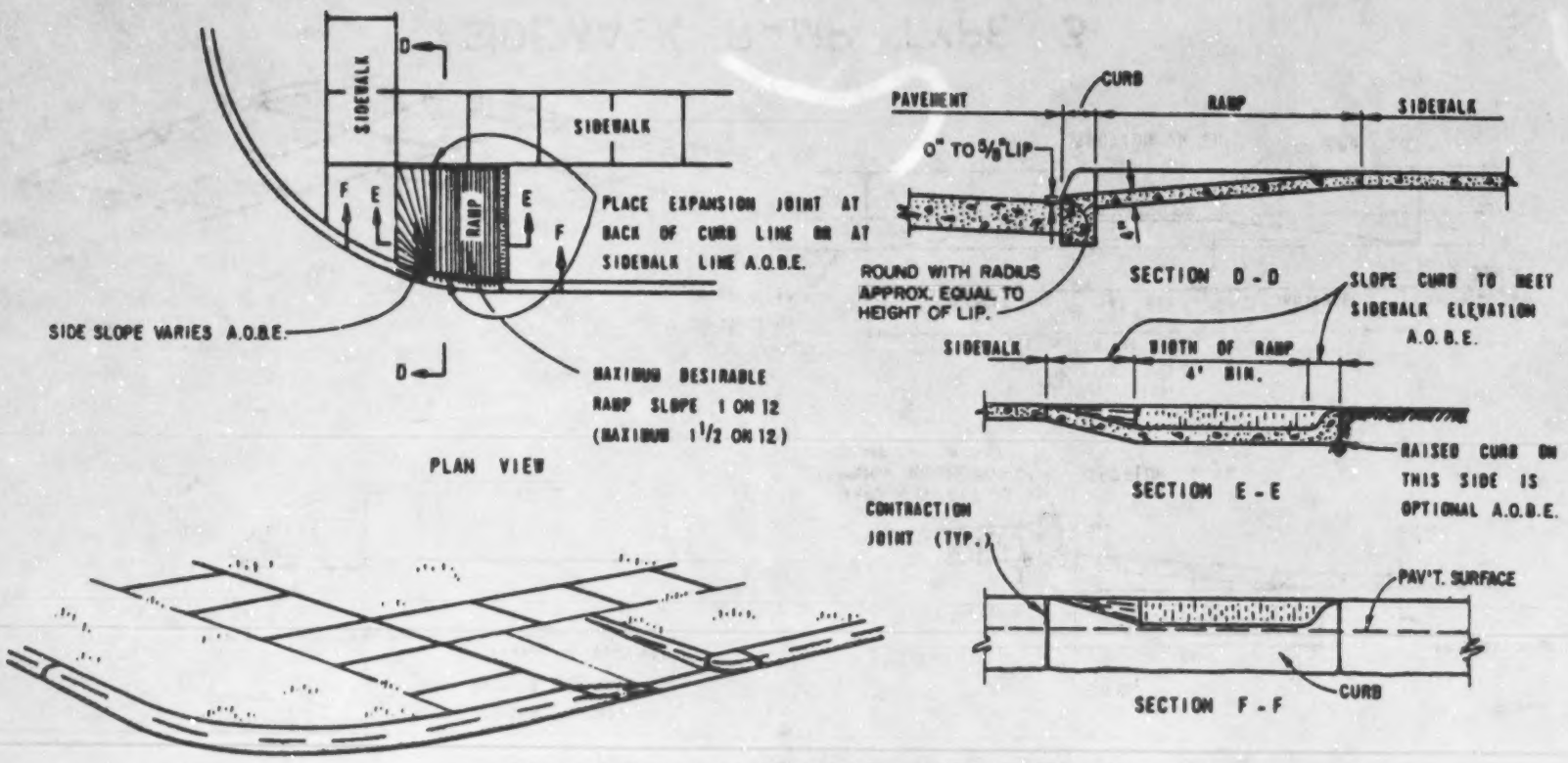
(c) This Part shall apply to any construction contract awarded, any construction project undertaken directly by State, county or municipal employees, or any plans approved by public agencies for construction by private developers on or after January 1, 1976.

170.3 Description. The work shall consist of the construction of either a portland cement concrete sidewalk ramp or an asphalt concrete sidewalk ramp in close conformity with the lines and grades shown in Appendix A-14, of this Title, infra, and in accordance with sections 608 and 609 of the New York State Department of Transportation "Standard Specifications of January 2, 1973" or local unit of government specifications considered equal. The local unit of government shall make the determination that their specifications are considered equal to State specifications.



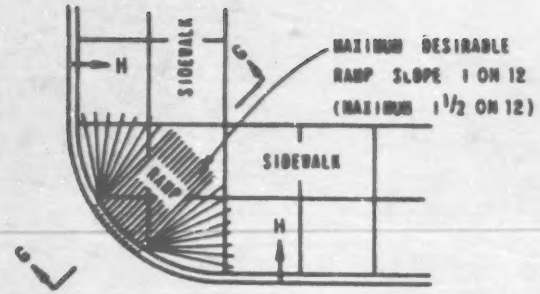
SIDEWALK RAMP TYPE I

NYS-6



SIDEWALK RAMP TYPE 2

NYS-7



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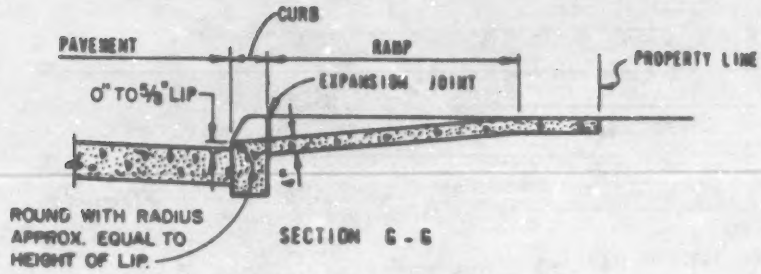
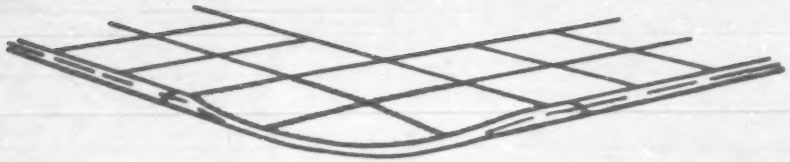
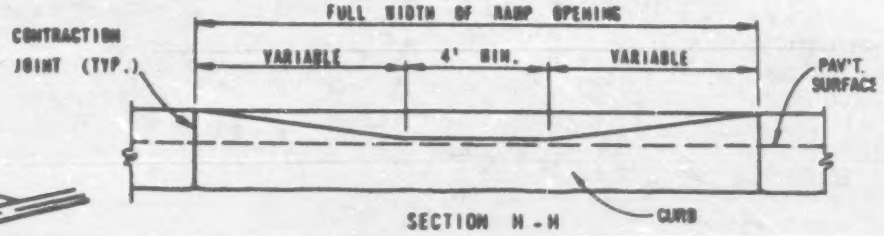


SECTION G - G





SECTION H - H

SIDEWALK RAMP TYPE 3

APPENDIX A-14

NOTES

1. Curb cut ramps type and location are to be as shown on the plans or as directed by the engineer.
2. Surface texture of the ramp shall be deep grooved, ½" wide by ¼" deep on 1" centers, transverse to the ramp.
3. The normal pavement edge profile shall be maintained through the area of the ramp.
4. Type 1 and 2 ramps may be provided in both directions.
5. When an intersection contains pedestrian activated signals, make provisions for a person in a wheelchair to activate the signal without stopping on ramp.
6. Stop lines are to be provided in advance of wheelchair ramps.
7. Where feasible provide for drainage pick-ups immediately upstream from the ramp. Reticuline or retangular drainage grates are to be used in the area of ramps.

INTRODUCTION

In many areas, the Building Construction Code of New York State contains the most detailed provisions concerning facilities for the physically handicapped of any of the codes discussed herein. It is seriously limited, however, by the minimal percentage of facilities required for the handicapped in most types of building construction and by its cumulative gross floor area criteria which deny access to the handicapped in many smaller buildings. Nonetheless, the provisions of this code do mandate at least some facilities for physically handicapped citizens in certain types of building construction.

The Several Portions of the Building Construction Code

The New York State Building Construction Code is sub-divided into four primary sections, with regulations in each of these four sections identified by a letter prefix as follows:

A – One and Two Family Dwellings
B – Multiple Dwellings
C – General Building Construction
P – Plumbing

Each provision is then identified with a letter prefix followed by a numerical indication **(EX: B 109)**; Roman numerals and lower case letters are added if further classification is called for **(EX: B109-2a)**.

For the purposes of this document, discussion will be limited to Multiple Dwellings (prefix B) and General Building Construction (prefix C). The portion of the code devoted to One and Two Family Dwellings (prefix A) does not contain provisions for facilities for the handicapped, while the Plumbing Code (prefix P) repeats regulations covered in the Multiple Dwellings and General Building Construction portions of the code. Additionally, numbers in parentheses in the margin refer to similar sections in the official version of the code for legal purposes – found in Volume 9 Executive (B) of the "Official Compilation of Codes, Rules and Regulations of the State of New York" – and designated 9 NYCRR for citation purposes. These numbers are included for the reader's convenience.

Administration and Enforcement

The administration and enforcement of the code are the responsibility of building officials within local municipalities pursuant to their own administrative ordinances. The municipalities of the State have the option to accept or not to accept the applicability of the code. Those municipalities which have already accepted the applicability of the code obtain without further action the protection afforded by its regulations, including the amendments relating to facilities for the physically handicapped.

Explanation: Since the State Building Construction Code constitutes New York State law, it is thus a minimum requirement. In essence then, those municipalities which do not accept the applicability of the code must promulgate within their administrative ordinances a code which is more restrictive than the State Code. In terms of enforcing the code, it is the New York State Building Code Council which charges local building officials with the enforcement responsibility. It then becomes the responsibility of the State Building Code Council to take action if the enforcement responsibility is not being met on the local level.

B103
(700.3)
EFFECTIVE DATE

This code shall take effect on January 1, 1973 and shall supersede the State Building Construction Code applicable to multiple dwellings first promulgated on December 15, 1953, and which was last amended on January 1, 1971.

Explanation: The effective date of amendments calling for Facilities for the Physically Handicapped is January 1, 1971. All new buildings subject to the Multiple Dwellings Code begun since this date must provide facilities for the handicapped if gross floor area and occupancy criteria are also met. If a building permit was issued or plans were approved prior to this date, such facilities are not mandatory. Facilities for the disabled are required if plans are approved or permits issued after January 1, 1971.

B104
(700.4)
PARTIAL INVALIDITY

If any term, part, provision, section, subdivision or paragraph of this Code shall be held unconstitutional, invalid, or ineffective, in whole or in part, such determination shall not be deemed to invalidate the remaining terms, parts, provisions, sections, subdivisions and paragraphs thereof.

Explanation: This clause prevents precedent-setting decisions. If a regulation regarding facilities for the disabled is held ineffective for a particular building due to hardship or other reason, other provisions concerning the disabled are still in effect, and such waiver only applies to the provision for this single building.

B105
(701)
SCOPE

B105-1
(701.1)
New Buildings

a. This code shall apply to multiple dwellings including their accessory structures and parts thereof, and to buildings containing mixed occupancies in which the residential occupancy is a multiple dwelling as defined in this Code.

Explanation: According to the definition within the Code, there are five (5) separate types of multiple dwellings, as follows:

1. Building containing three or more dwelling units;
2. Building containing living, sanitary and sleeping facilities occupied by one or two families and more than four lodgers residing with either one of such families;
3. Building with one or more sleeping rooms, other than a one or two family dwelling, used or occupied by permanent or transient paying guests or tenants;

4. Building with sleeping accommodations for more than five persons used or occupied as a club, dormitory, fraternity or sorority house or for similar uses;

5. Building used or occupied as a convalescent, old-age or nursing home, but not including private or public hospitals or public institutions.

Essentially, all of the following multiple dwelling buildings fall within the regulations of this code: apartment houses, apartment buildings, garden apartments, apartment hotels, hotels, motels, lodging (boarding or rooming) houses, club buildings with sleeping accommodations, dormitories, fraternity and sorority houses, nursing homes, old-age homes.

b. Multiple dwellings containing not more than two dwelling units . . . shall be regulated as a one or two family dwelling and not pursuant to this code.

B105-2
(701.2)
Existing Buildings

B105-2.1
(701.2a)
General

This Code shall also apply to existing buildings described in this section as if hereafter erected.

Explanation: This is a crucial regulation. If any one of the following four conditions is met for an existing building, then it must be treated as new construction; thus, the regulations governing facilities for the handicapped might apply.

a. A building hereafter occupied as a multiple dwelling, which building was not so occupied when this Code became applicable to the municipality in which the building is situated.

Explanation: When a municipality adopts this code, if a building within that municipality changes its occupancy use to that of a multiple dwelling, then it might be required to include facilities for the disabled.

b. A building moved into, or moved within, municipal limits subject to this Code, which is to be occupied as a multiple dwelling.

Explanation: Facilities for the physically handicapped might also be required in an existing building if the building itself were physically moved within existing municipal limits. Buildings to which this regulation would apply most often would be lodging houses, clubs, and buildings for senior citizens.

c. A building occupied as a multiple dwelling which is altered or repaired, when the cost of such alterations or repairs within any six-month period exceeds 50% of the cost of replacement of the building at the beginning of that six-month period.

Explanation: For instance, the estimated cost to replace a building completely is six million dollars at the beginning of a given six-month period. If a determination were made by the building owner to alter the building instead, and the cost of such alterations during a six-month period exceeds three million dollars (50%), such building would be subject to the regulations of this Code and might require facilities for the handicapped. This regulation also suggests that multiple dwelling owners must submit an estimated cost of building replacement to some authority even if only repairs or alterations are being considered.

d. A building whose occupancy or use is changed to one of the following: apartment house or apartment hotel, hotel, lodging house, club, dormitory, garden apartment, motel, old-age home, nursing home, and building for senior citizens.

B105-3
(701.3)
Mixed Occupancy

A building which is occupied in part for residential use, and in part for some other use not accessory thereto, shall be deemed to be a building of mixed occupancy, and, except for the separation requirements as set forth in section B402-4.1, the occupancy other than residential is not regulated by this Code.

Explanation: Portions of a building designated as a B1 or B2 occupancy are subject to this Code. Portions of a building designated for other occupancies or uses are subject to the rules of the General Building Construction Code.

B202
(711)
CLASSIFICATION OF BUILDINGS

B202-1
(711.1)
Classification by Occupancy Groups

Multiple dwellings for the purpose of this Code shall be classified in respect to the permanent or transient character of their occupancy groups, and to the number and physical condition of the occupants.

Explanation: The crucial consideration here depends on the permanent or transient character of a building's occupancy group, because gross floor area criteria which dictate facilities for the physically handicapped vary for permanent or transient occupancy groups. (For further explanation, please refer to B214-1b.)

The classification shall be in accordance with the following groups:

Group B1

Buildings containing one or two dwelling units with more than four lodgers residing with a family in either one of such dwelling units;

Explanation: We will not consider one or two family dwellings in this volume. Even though more than four lodgers residing with one family causes the building to be classified as a B1 multiple dwelling, such a building is extremely unlikely to contain 20,000 square feet of cumulative gross floor area. Facilities for the physically handicapped are not required in any B1 occupancy buildings of less than 20,000 square feet of floor area.

Buildings containing three or more dwelling units;

Explanation: Permanent or transient.

Apartment houses and apartment hotels;

Explanation: By definition within this Code, an apartment house has a permanent occupancy group while an apartment hotel may be of a permanent or transient character.

Hotels;

Explanation: Transient

Lodging Houses;

Explanation: By definition, these dwellings may be either permanent or transient in nature.

Buildings with sleeping accommodations for more than five persons used or occupied as a club, dormitory, fraternity or sorority house, or for similar uses;

Explanation: Not specifically defined within the Code, but most probably transient in character.

Garden Apartments;

Explanation: Permanent

Motels;

Explanation: Transient

Group B2

Old-age and nursing homes other than group B3 occupancy.

Group B3

Buildings for Senior Citizens, intended primarily for persons 62 years old or more, who are in good physical condition and do not require physical assistance.

Explanation: Buildings in Group B2 would consist of old-age and nursing homes for persons who are not in good physical condition and who do require physical assistance, whereas buildings in Group B3 would be for Senior Citizens who are capable of functioning independently.

B214
(723)
FACILITIES FOR THE PHYSICALLY HANDICAPPED

B214-1
(723.1)
General Requirements

a. For the purpose of this section, facilities for the physically handicapped shall include plumbing, heating, electrical, ventilating, air conditioning, refrigerating equipment, elevators, dumbwaiters, escalators, walks, ramps, parking space, floor surfaces, water fountains, telephones, door hardware and other fixtures and elements affecting the functional use of buildings by the physically handicapped.

Explanation: The final entry here – other fixtures and elements – should include the situating of items within a multiple dwelling unit so that they are within easy reach. Consideration should be afforded the following average requirements of wheelchair-users: the average vertical reach of an adult functioning in a wheelchair is 60 inches measured from the floor level; the average diagonal reach is 48 inches from floor level; and the average horizontal reach is approximately 31 inches. Such requirements are important to the placement of such items as kitchen cabinets, electrical switches, closet garment rods, etc.

b. Buildings set forth in Table B214-1a shall be equipped with facilities to provide access and a safe environment for the physically handicapped. Cumulative gross floor area shall include the gross floor area of one or more buildings of the same occupancy on the premises.

TABLE B 214-1a (I-723) – BUILDINGS THAT REQUIRE FACILITIES FOR THE PHYSICALLY HANDICAPPED

Occupancy Group	Where the Cumulative Gross Floor Area Exceeds:
B1 – Permanent	40,000 Square Feet
B1 – Transient	20,000 Square Feet
B2 – Permanent or Transient	Required in all cases

Explanation: Cumulative gross floor area is the sum of all the gross areas of all floor levels in a building(s) or premises. If an individual garden apartment building – a group B1 permanent occupancy – is 15,000 square feet, but the premises contains three such buildings for a cumulative gross floor area of 45,000 square feet, then said premises would require facilities for the physically handicapped. Basically, apartment houses and garden apartments (B1 permanent) where cumulative gross floor area exceeds 40,000 square feet require facilities for the physically handicapped; hotels, motels, club buildings, dormitories, fraternity and sorority houses (B1 transient) where cumulative gross floor area exceeds 20,000 square feet require facilities for the physically handicapped; lodging houses and apartment hotels would require facilities for the physically handicapped depending both on the designated occupancy group and the cumulative gross floor area; and old-age and nursing homes for persons needing physical assistance (B2 permanent or transient) require such facilities in all cases. In addition to the above requirements of the New York State Code, Public Law 90-480 requires that facilities for the physically handicapped must be included in multiple dwelling buildings constructed, altered, leased, or financed by the Federal government or with Federal assistance; and, according to Chapter 656 (1972) and Chapter 449 (1974) of the laws of New York State, all public buildings in the State or within municipalities of the State constructed, altered, or assisted by State or municipal funds must provide facilities for the disabled regardless of square foot requirements.

c. The provisions of this section shall be supplemental to, and take precedence over other less restrictive provisions of this Code.

Explanation: This regulation clearly eliminates the possibility of less restrictive "loopholes" taking precedence over provision requirements for the physically handicapped.

d. The number of dwelling units and sleeping rooms that are required to be equipped with facilities for the physically handicapped shall be as set forth in table B214-1b.

TABLE B214-1b (II-723) — NUMBER OF DWELLING UNITS AND SLEEPING ROOMS THAT REQUIRE FACILITIES FOR THE PHYSICALLY HANDICAPPED[1]

Occupancy Group	Number
B1 — permanent	2 dwelling units or 2 per cent of the total number of dwelling units, whichever is larger.
B1 — transient	2 sleeping rooms for transient occupancy or 2 per cent of the total number of such rooms, whichever is larger.
B2 — permanent or transient	One sleeping room or 10 per cent of the total number of sleeping rooms, whichever is larger.

[1]Where determination by per cent results in a number containing a decimal of .5 or more, use the next higher number.

Explanation: These are minimum requirements. According to the Architectural and Transportation Barriers Compliance Board, established to enforce Public Law 90-480, ten (10) per cent or nearly 22 million Americans are physically disabled to some extent. The New York State figure of two per cent of dwelling units relegates a substantial number of the state's physically handicapped citizens to housing unsuited to their needs. Four (4) per cent of dwelling units and sleeping rooms is preferred. Also, it is suggested that dwelling units for the physically handicapped be distributed proportionately among different types of apartments (studios, 1 bedroom, 2 bedroom, etc.). The following table shows the reader at a glance the number of dwelling units or sleeping rooms that are required to have facilities for the physically handicapped for a given number of total dwelling units of occupancy B1 and B2. This table reflects footnote no. 1 to table B214-1b.

TABLE A — NUMBER OF DWELLING UNITS AND SLEEPING ROOMS THAT REQUIRE FACILITIES FOR THE PHYSICALLY HANDICAPPED

Total Number of Dwelling Units or Sleeping Rooms				Number of Dwelling Units or Rooms Which Require Facilities for the Physically Handicapped*
B1 — Permanent over 40,000 sq. ft. B1 — Transient over 20,000 sq. ft.		B2 Permanent or Transient		
From	To	From	To	Number
3	124	3	14	1
125	174	15	24	2
175	224	25	34	3
225	274	35	44	4
275	324	45	54	5
325	374	55	64	6
375	424	65	74	7
425	474	75	84	8
475	524	85	94	9
525	574	95	104	10
575	624	105	114	11
625	674	115	124	12

TABLE A – NUMBER OF DWELLING UNITS AND SLEEPING ROOMS THAT REQUIRE FACILITIES FOR THE PHYSICALLY HANDICAPPED (Continued)

Total Number of Dwelling Units or Sleeping Rooms				Number of Dwelling Units or Rooms Which Require Facilities for the Physically Handicapped*
B1 – Permanent over 40,000 sq. ft. B1 – Transient over 20,000 sq. ft.		B2 Permanent or Transient		
From	To	From	To	Number
675	724	125	134	13
725	774	135	144	14
775	824	145	154	15
825	874	155	164	16
875	924	165	174	17
925	974	175	184	18
975	1024	185	194	19
1025	1074	195	204	20

*In determining by per cent the number of dwelling units or rooms, a result containing a decimal of .5 or more is considered to be the next higher number.

B214-2
(723.2)
Path of Travel

B214-2.1
(723.2a)
General Requirements

a. There shall be at least one path of travel consisting of walks, ramps, lobbies, elevators or passageways, or a necessary combination thereof, that provides free and unobstructed access to, and exit from the building. Path of travel shall extend from a public or private roadway, or from an automobile parking space reserved for use by the physically handicapped.

Explanation: The key words here are "provides free and unobstructed access to, and exit from the building." While any combination of the above listed components of the path of travel is acceptable, it is preferable that the path of travel be the most direct route possible from the parking space or roadway to the building. (Figure 1)

b. The distance along the path of travel from a public or private roadway or from an automobile parking space reserved for use by the physically handicapped, to a building entrance door shall not exceed 200 feet.

Explanation: For many physically disabled, 200 feet of distance can be an obstacle in itself. While this may be an acceptable distance for some, the shortest possible path of travel is preferred. (Figure 1)

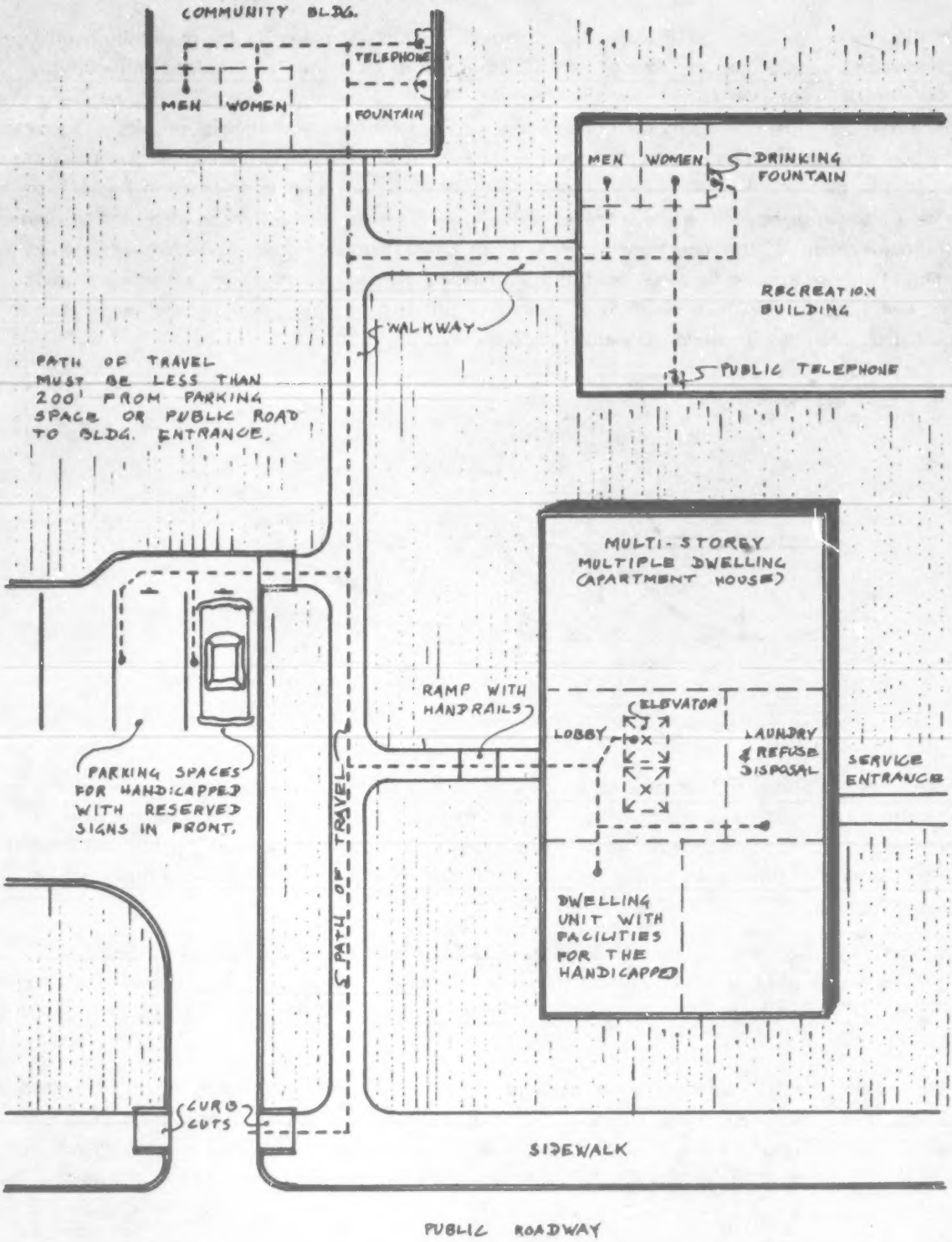


Figure 1. Path of Travel Requirements

c. Path of travel shall have a durable, finished surface. Steps or abrupt changes in level are not permitted.

Explanation: Many of the difficulties related to providing a path of travel for the physically handicapped can be solved through proper site development Such a path of travel may be provided and aesthetic qualities may be maintained at the same time through the use of winding walks, terracing, retaining walls, etc. The best and most commonly used materials are poured concrete and asphalt concrete. The surfaces may be scored or broom textured to reduce the possibility of slipping. Good design and workmanship are required so that wherever an expansion joint, ramp, or curb cut occurs in the path of travel, it shall never have a bump or projection above the adjoining surface greater than 5/8 of an inch. We recommend that the requirements of the New York State Curb Cut Law (effective January 1, 1976), reprinted at the beginning of this section, be followed carefully. Preferred curb cut dimensions are a maximum grade ratio of 1 in 12 and a minimum width of 48 inches. A 5/8 inch or greater bump would be difficult to negotiate and hazardous for some wheelchair users. (Figure 2)

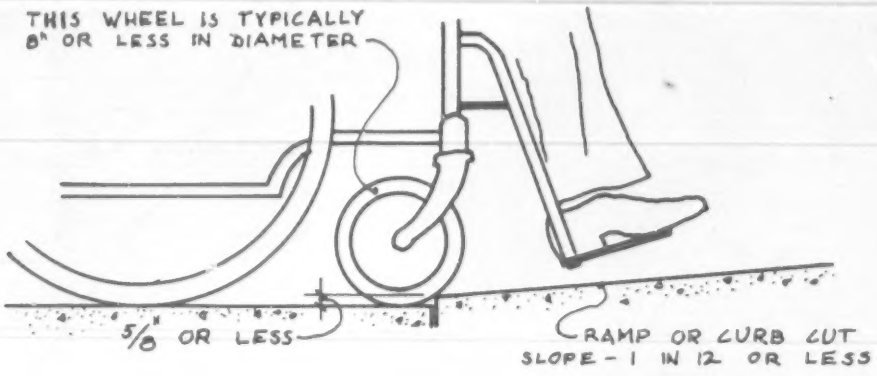


Figure 2. Maximum Height of Curb Cut Lip

d. Where accessory public and recreational spaces such as dining rooms, meeting rooms, gymnasiums, or auditoriums are provided on the premises, the path of travel shall extend to the entrances of such spaces. Where public toilet rooms or public drinking fountains are provided for accessory public and recreational spaces, the path of travel shall include at least one public toilet room for each sex and one public drinking fountain.

Explanation: In effect, any structure built on the premises which is of a public or recreational nature must provide access to handicapped persons by means of a path of travel as defined above. This path of travel must also extend to public toilet rooms and drinking fountains if these facilities are provided within the building.

e. Where laundry rooms or refuse disposal locations are provided on the premises, the path of travel shall also extend from each dwelling unit equipped with facilities for the physically handicapped to at least one laundry room and one refuse disposal location, except where laundry facilities are located within the dwelling unit as set forth in Section B502-6f, the path of travel shall not be required to extend to a general laundry room.

Explanation: Section B502-6f reads as follows: "There shall be provided within each dwelling unit, not designed for use primarily by transients, at least one laundry tray or automatic laundry washing machine,

or in lieu thereof, there shall be provided in a readily accessible location within a general laundry room at least one two-compartment laundry tray for each ten dwelling units or one automatic laundry washing machine for each twenty dwelling units. Such laundry room shall be located within the building and shall be accessible from within the building, except that in multiple dwellings not more than two stories in height accessibility from within the building is not required where access is not more than 100 feet, along a path of paved walkways, from the exterior entrance serving one or more dwelling units." To simplify this, there must always be an accessible path of travel on the premises of a multiple dwelling to the refuse disposal location. There must also be an accessible path of travel to a general laundry room, unless individual laundry facilities are located within the multiple dwelling unit used by the physically handicapped tenant.

f. Guardrails at least 32 inches in height shall be provided at the sides of the path of travel where the adjoining surface drops more than 12 inches within three feet thereof. One dimension of opening in guardrail shall not exceed 6 inches.

Explanation: This is an obvious and sensible deterrent to injury caused by falls or wet, icy conditions which present serious hazard to all persons. The Code specifies elsewhere that all ramps must have handrails; however, no mention is made of building entry platforms. We feel that any entry platform along the path of travel which is 12 inches above the adjoining surface should also be protected by guardrails. (Figure 3)

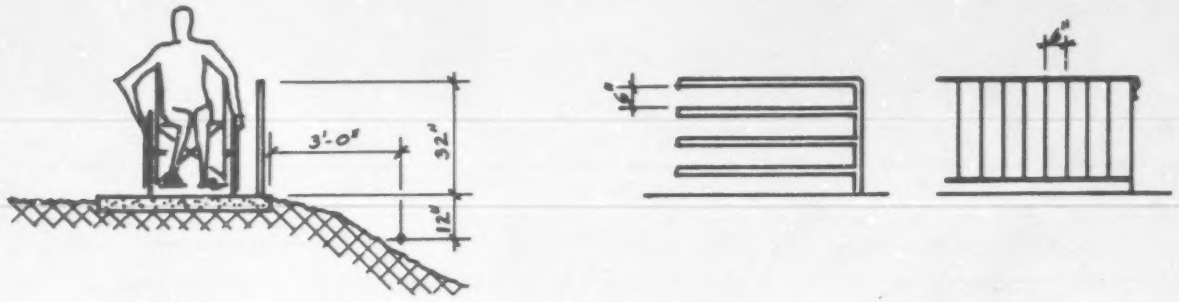


Figure 3. Guardrail Requirements

g. Path of travel shall be provided with artificial light as set forth in Section B507-2.

Explanation: This provision reads as follows: "During occupancy, electric light of intensity sufficient for safe travel shall be provided throughout exits, for garages, for spaces to which the public has access, and for spaces in which fire protection equipment is installed. Switches controlling such light shall be provided in a central location and, if accessible to other than authorized persons, shall be designed so as to be protected against unauthorized use." This regulation insures sufficient artificial light for interior portions of the path of travel. Artificial lighting of walks and ramps, as well as parking spaces for the physically handicapped, is also preferred.

B214-2.2
(723.2b)
Walks

a. Walks shall have a width of at least 48 inches.

Explanation: A width of 48 inches will allow a person in a wheelchair to make a complete 180-degree turn if he so desires; it also allows oncoming pedestrians to pass by. However, two wheelchairs approaching each other may not have enough room to pass. A walk width of 60 inches is preferred. (Figure 4)

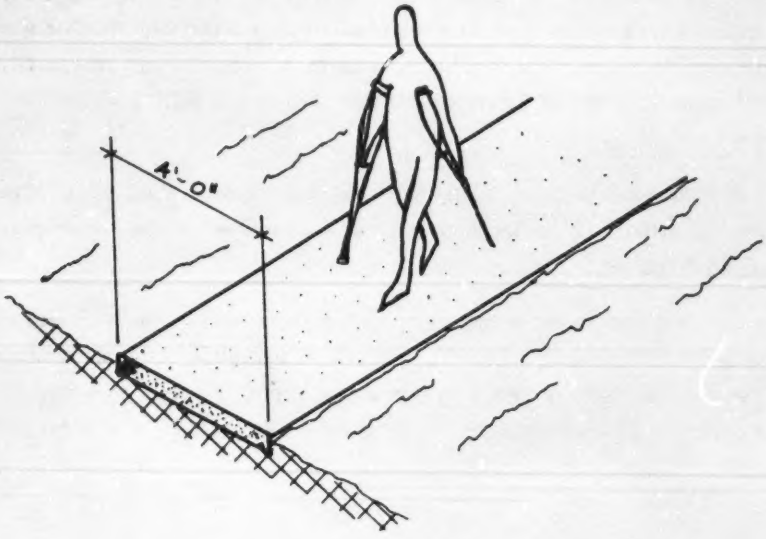


Figure 4. Minimum Width of Walkways

b. Gradient of walks shall not exceed 1 in 20. Where the gradient exceeds 1 in 20, the path shall be classified as a ramp.

Explanation: Any part of the path of travel which meets all other requirements pertaining to walks and path of travel and which is dead level or has a gradient of 1 in 20 or less is to be considered a walkway. If the slope is steeper than 1 in 20, yet not steeper than 1 in 12, the path of travel must be classified as a ramp. Under no conditions shall the slope of any portion of the path of travel for the handicapped exceed 1 in 12.

B214-2.3
(723.2c)
Ramps

a. For buildings of group B1 permanent occupancy, ramps shall have a width of at least 36 inches provided the minimum clearance between handrails is 36 inches. For buildings of group B1 transient occupancy and B2 occupancy, ramps shall have a width of at least 48 inches, except that 36 inches is permitted where ramps and adjoining steps connect the same levels.

Explanation: For B1 permanent occupancy the most important requirement here is that the clear distance of 36 inches between railings always be maintained; the ramp itself must be at least 36 inches wide, but in many cases it should be somewhat wider to provide anchorage for the handrails which must always be a minimum of 36 inches clear distance apart. The minimum ramp width acceptable to the

Veterans Administration under Public Law 702, which sets forth requirements for homes for seriously disabled veterans, is 3'6". We feel that this minimum width is much more preferable and realistic than 3'0". (Figure 5)

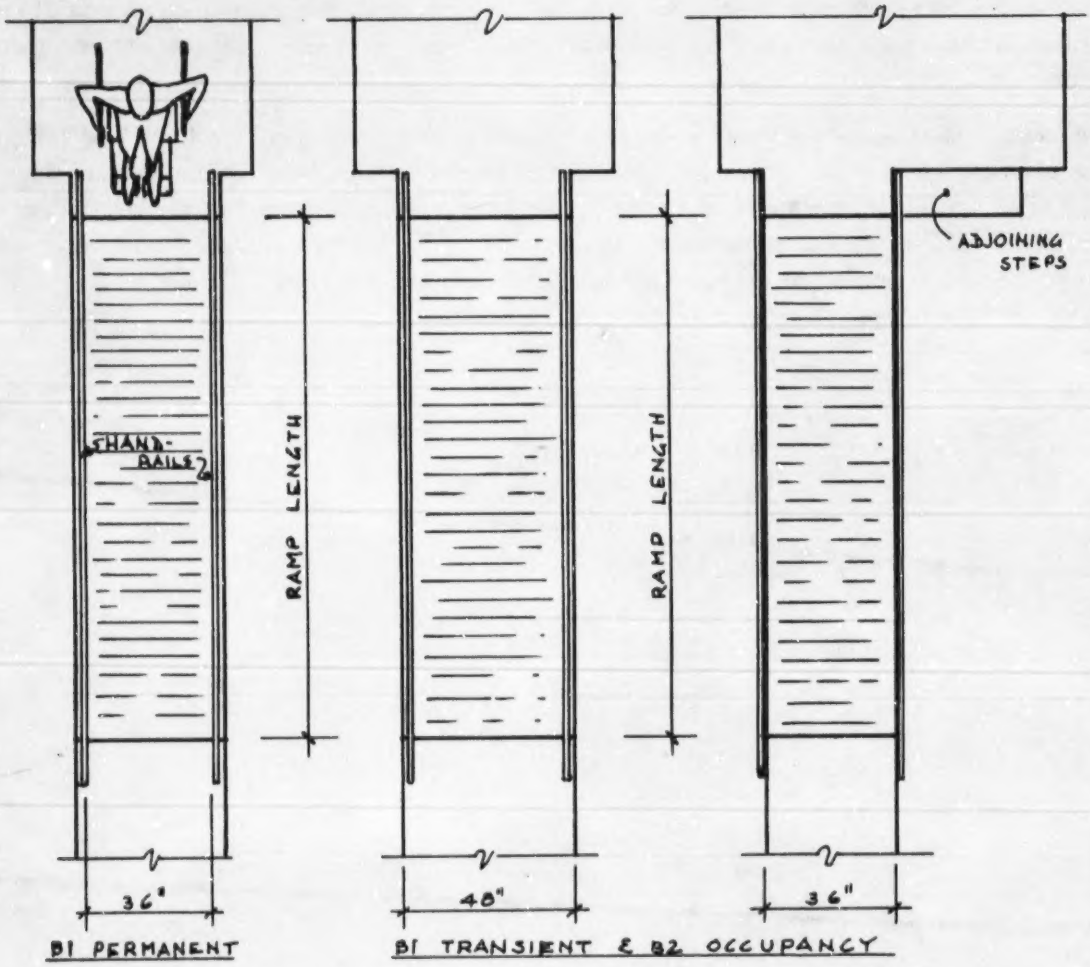


Figure 5. Minimum Widths of Ramps

b. Ramps shall have a non-skid surface and a gradient not exceeding 1 in 12.

Explanation: Figure 6.

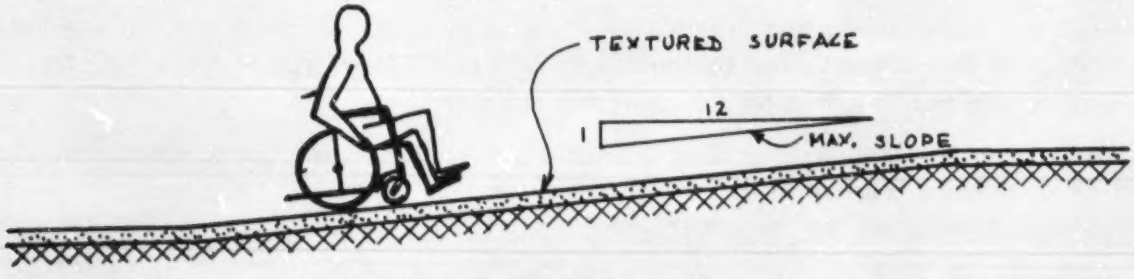


Figure 6. Maximum Slope of Ramps

c. At each end of a ramp and at a door opening on a ramp, there shall be a level landing at least 4 feet long.

Explanation: For a better description of landing requirements see B214-2.3f below.

d. Intermediate level landings at least 4 feet long shall be provided so that the sloping portion of the ramp between landings shall have a length not exceeding 2½ times the inverse of the gradient expressed in feet.

Explanation: The maximum gradient for a ramp allowed by this building code is 1 in 12 or 1/12; the inverse of that gradient is 12. Therefore, the maximum length allowed for a ramp of 1 in 12 slope is (12 x 2.5) or 30 feet. Furthermore, this code defines a ramp as having a gradient anywhere from 1 in 12 to 1 in 20, or 1/20; as the denominator increases from 12 to 20, the gradient becomes less steep and the length of the sloping portion of the ramp between landings is increased to a maximum of 20 x 2.5 or 50 feet. (Figure 7)

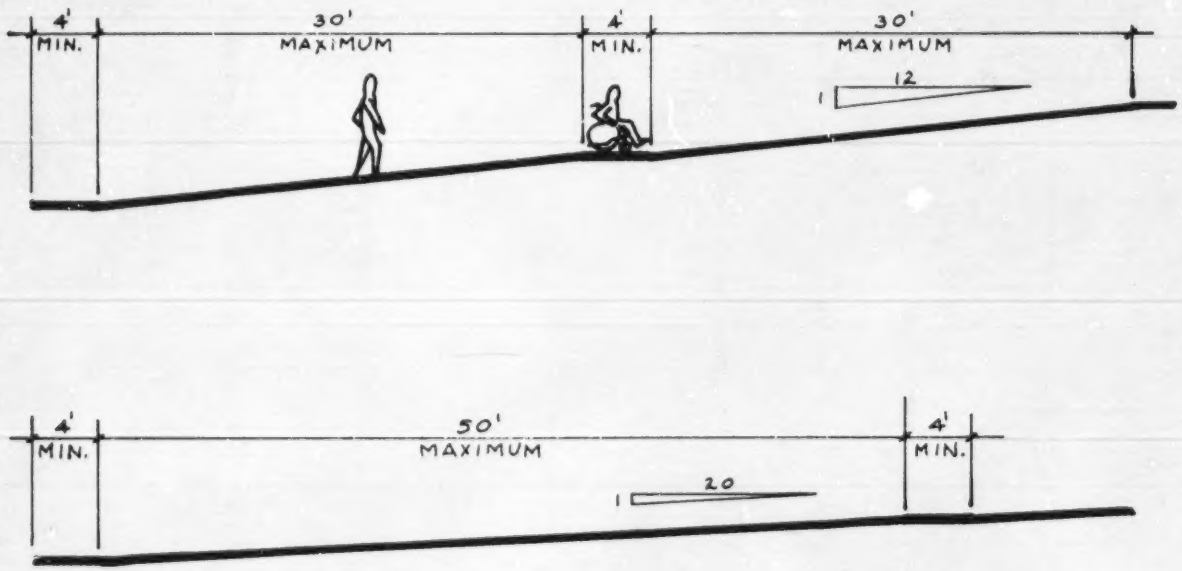


Figure 7. Maximum Length of Ramps Between Level Platforms

e. A level landing, with a minimum linear dimension of 4 feet, shall be provided wherever a sharp change in direction occurs in a ramp.

Explanation: A "sharp change in direction" would be any such change exceeding a 45-degree angle. (Figure 8)

f. Where a door opens on a landing, there shall be a level area having a minimum dimension of 4 feet and extending at least one foot beyond the jamb on the latch side. The door shall not decrease the required dimension of a landing for any arc of its swing.

Explanation: The area of the landing which is swept over as the door opens fully to ninety degrees is not to be considered as any part of the required 4 foot minimum dimension. This minimum dimension

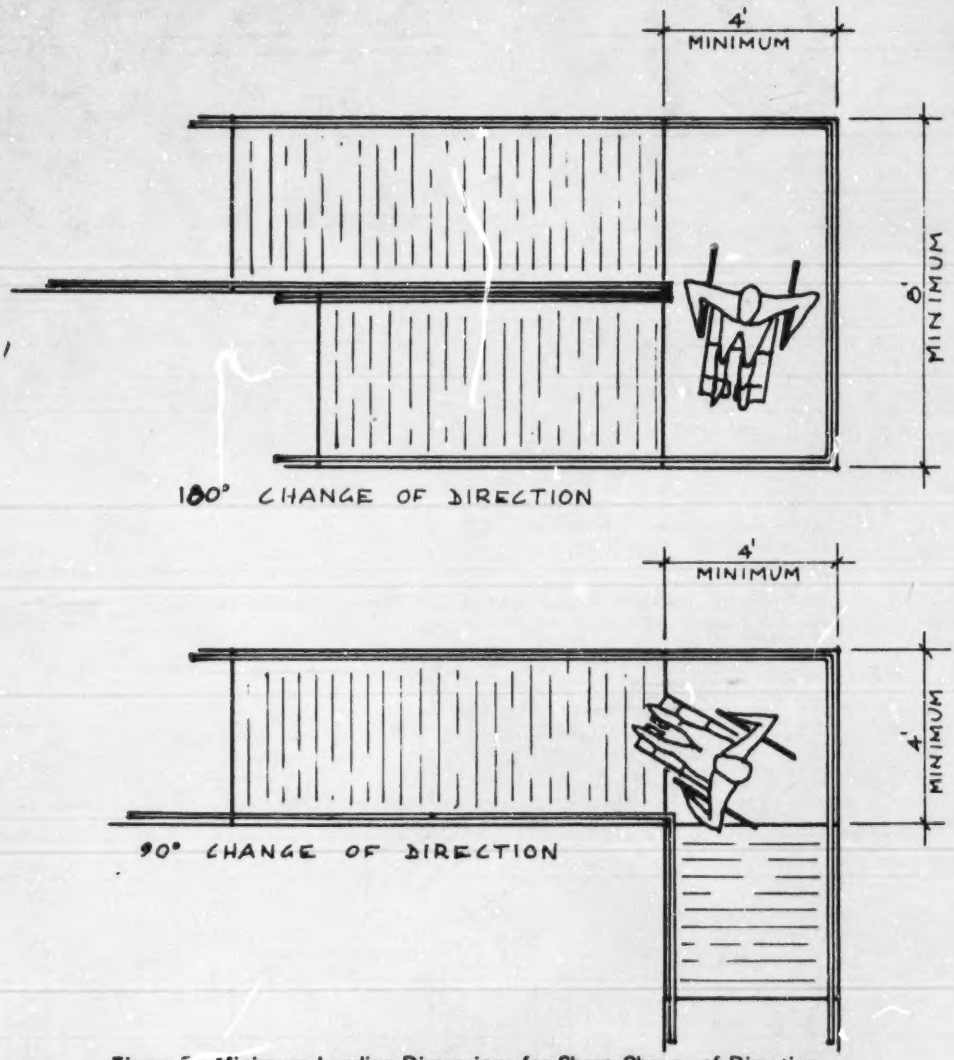


Figure 8. Minimum Landing Dimensions for Sharp Change of Direction

begins at the edge of the latch side of the door and extends to the platform edge. The one foot dimension beyond the jamb on the latch side is very necessary to provide clearance for a wheelchair-confined person to approach and open a door without excessive back and forth maneuvering, and also minimizes the possibility of the wheelchair-user's tumbling from the chair as he leans forward to grasp the door handle. (Figure 9)

g. Ramps shall have handrails 32 inches high on both sides. Handrails shall extend at least one foot beyond the top and bottom of the ramp. Handrail extensions shall be designed so that they do not constitute a hazard.

Explanation: These handrails are very helpful in assisting elderly or handicapped people who have difficulty negotiating an inclined surface. These railings also protect wheelchair users from rolling off the ramp. The handrail extensions beyond the top and bottom of the ramp ease the transition from horizontal to inclined plane and vice versa. Handrail extensions should not project into any landings or walkways. Where possible, handrail extensions should return to adjacent walls. See also provision B214-2.1f. (Figure 10)

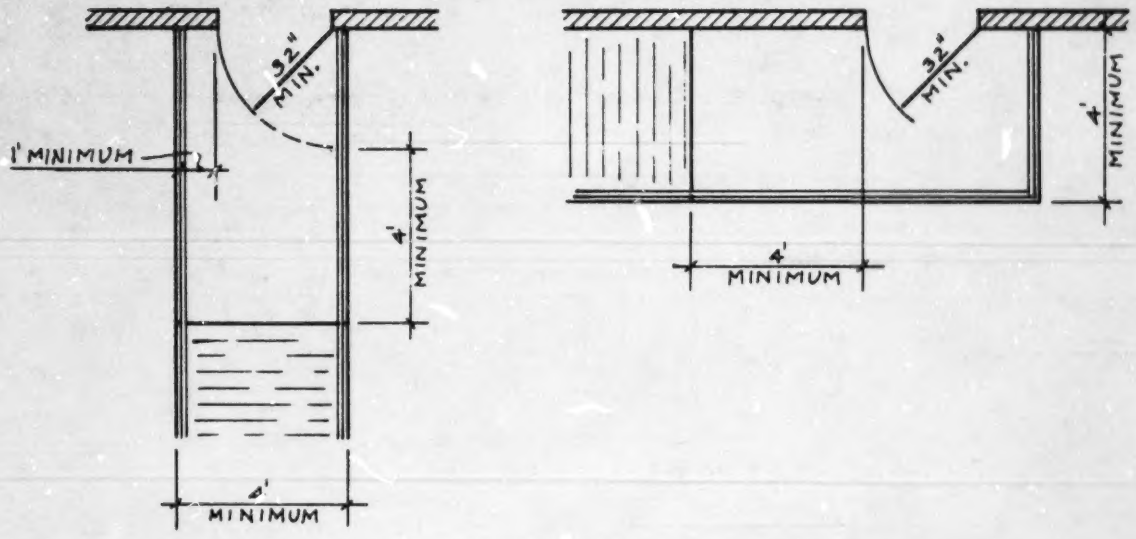


Figure 9. Minimum Door/Platform Clearances

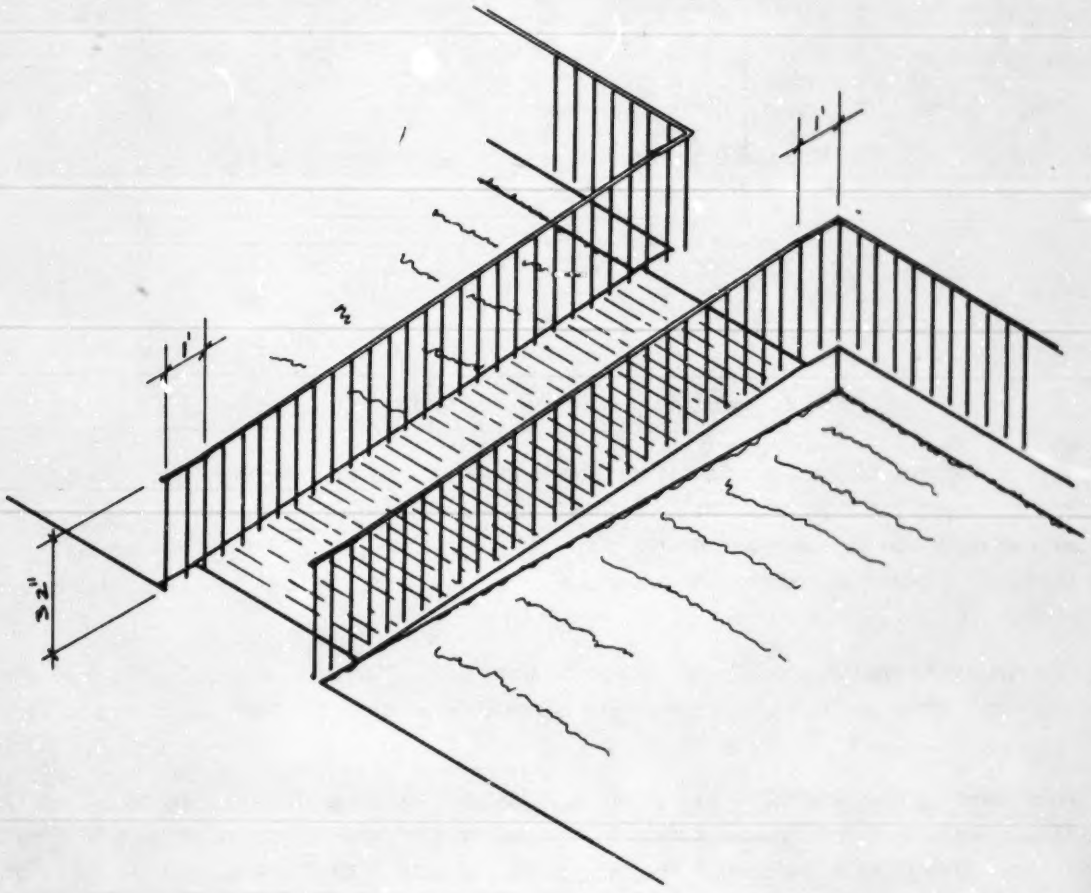


Figure 10. Ramp Handrailings

B214-2.4
(723.2d)
Elevators

a. Where the path of travel includes an elevato , at least one elevator shall conform to the requirements of this section.

Explanation: In buildings which require elevators, it is still preferred that apartments on the entrance level be set aside for the physically handicapped. Since elevators are subject to mechanical failure, such breakdowns would not deny access to handicapped tenants.

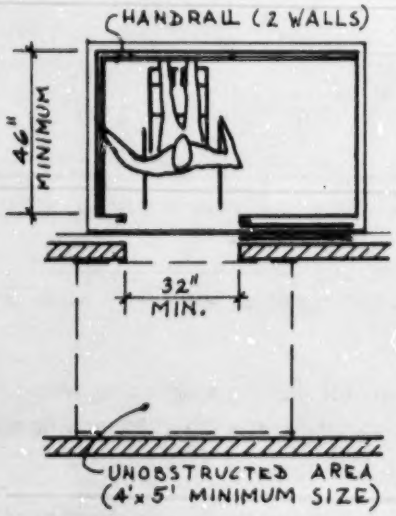
b. Elevator cars shall have a clear inside depth of not less than 46 inches. An unobstructed area at least 4 feet by 5 feet shall be provided in front of the elevator door on the entrance story.

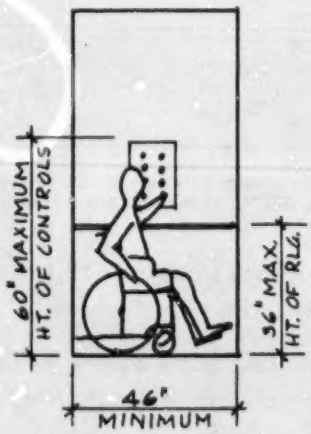
Explanation: For those physically handicapped who are compelled to use a wheelchair, an elevator with a depth of 46 inches, while acceptable, does not provide much mobility, particularly if the width of the elevator is minimal. An elevator car not less than 25 sq. ft. with a minimum dimension of 56 inches would give the physically handicapped tenant freedom of movement within the elevator. This could be helpful in situations where the individual must carry packages, groceries, etc. (Figure 11)

c. Hoistway doors and car doors shall provide a clear opening at least 32 inches in width. (Figure 11)

d. In automatic elevators, the emergency controls and controls for stories that are within the path of travel shall be located no higher than 60 inches above the elevator platform. Controls shall have raised letters or other means that are identifiable by persons with visual handicaps.

Explanation: We also recommend the installation of braille plates for floor designation on each floor, located 60 inches above the floor on the fixed point at the open side of the elevator door. A maximum height of 60 inches above the platform will insure that controls will be within reach of all persons, including those in wheelchairs. (Figure 12)





Figures 11 & 12. Minimum Elevator Requirements

B214-3
(723.3)

Parking Spaces

a. Where parking facilities are provided, at least two parking spaces or two per cent of the total number of parking spaces, whichever is greater, shall be reserved for the physically handicapped, except that no facilities for the physically handicapped are required where the cumulative parking area is less than 2000 square feet.

Explanation: Two thousand square feet of parking area is perhaps room enough for between 5 and 9 vehicles, depending on the layout of the parking area.

The following table shows the minimum number of spaces which must be reserved for the handicapped based on the total number of parking spaces in a given parking lot of over 2000 square feet.

TABLE B

Total Number of Parking Spaces		Minimum Number of Spaces Reserved for Handicapped*
From	To	
Less Than	124	2
125	174	3
175	224	4
225	274	5
275	324	6
325	374	7
375	424	8
425	474	9
475	524	10
525	574	11
575	624	12
625	674	13
675	724	14
725	774	15
775	824	16
825	874	17
875	924	18
925	974	19
975	1024	20

*When tabulating by per cent the number of parking spaces, a result containing a decimal of .5 or more is considered to be the next higher number.

b. Parking spaces shall be at least 10 feet wide, except that a parking space adjoining a walkway shall be at least 9 feet wide.

Explanation: At best, these are minimal acceptable dimensions for parking spaces that would restrict the mobility of some physically handicapped persons. Parking spaces 12 feet wide (11 feet where one adjoins a walkway) are preferred. (Figure 13)

c. Parking spaces shall be related to the path of travel so that the physically handicapped need not wheel or walk behind other parked cars, and so that the path of travel within the parking area is a minimum.

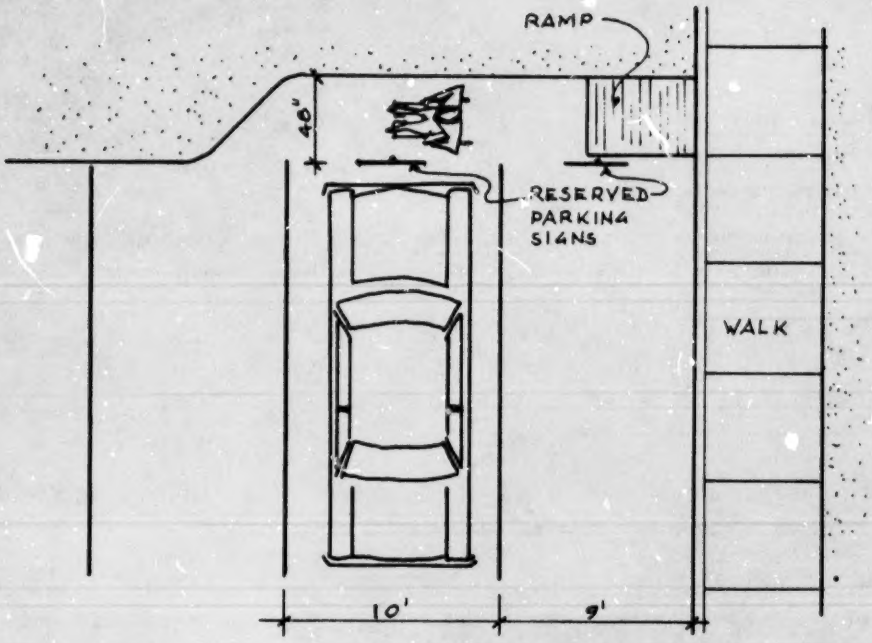


Figure 13. Minimum Parking Space Sizes

Explanation: The ideal location for a parking space reserved for the physically handicapped is adjoining the path of travel and as close to the dwelling as possible; in no case shall this distance exceed 200 feet. Unfortunately, the Code makes no provision as to how these reserved spaces shall be indicated and identified as being set aside for the handicapped. We feel that an above grade sign should be erected at each of these parking spaces clearly indicating that this space has been reserved for those who are physically handicapped. These signs should also incorporate the International Symbol of Accessibility somewhere in their design. (Figure 14)

Figure 14. Parking Space Sign

B214-4
(723.4)
Doors Within the Path of Travel and Doors in Spaces Required to be Accessible to the Physically Handicapped

a. Doors shall be of the single-swing or sliding type. Self-closing devices on doors, and power-operated and power-assisted doors under conditions of power failure, shall have a maximum closing tension of 8 pounds.

Explanation: While a maximum closing tension of 8 pounds is acceptable, as a general rule the less tension rating a door closer has, the easier it is for the physically handicapped to open. Time-delay door closing devices are also recommended. The placement of door mats or grates in front of doors should be avoided as these often inhibit the progress of the wheelchair user.

b. Single doors shall provide a clear opening at least 32 inches in width. Double doors shall provide a clear opening at least 32 inches in width with one leaf open.

Explanation: Such dimensions for single doors are applicable to all doors within dwelling units and sleeping rooms for the disabled. Where possible, doors should swing in the direction of exit travel. Metal kick plates 7½ inches in height attached to doors are also recommended for safety and for the protection of the door itself.

c. In vestibules, the clearance between the arcs of door swings shall be at least 4 feet.

Explanation: By definition within this Code, a vestibule is "an enclosed space, with doors or opening protectives, to provide protected passage between the exterior and interior of a building, or between spaces within a building." A 4 foot clearance between exterior and interior doors allows the handicapped person sufficient room to maneuver in order to open doors. It is preferred that such exterior and interior doors be part of a straight path of travel; if an interior door is at a 90-degree angle from the exterior door, maneuvering into position to open an interior door (particularly if it opens out) presents great difficulty. (Figure 15)

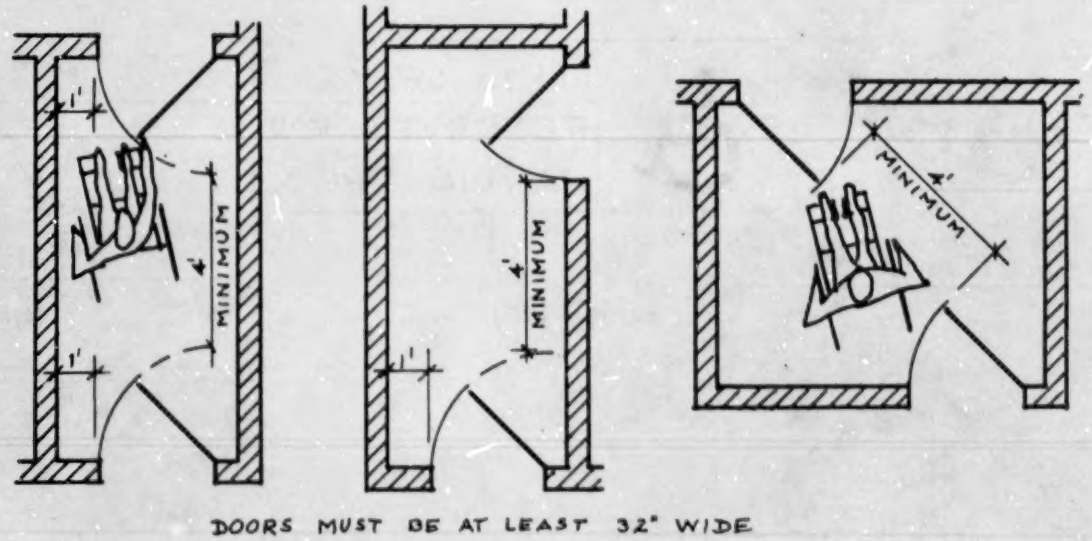


Figure 15. Vestibule Clearances

d. Door handles shall be not more than 42 inches above the floor and shall be of a type having a horizontal lever, a square or knurled knob, or otherwise arranged to permit easy operation.

Explanation: The topmost portion of door handles shall not be higher than 42 inches from the floor. Interpretation of a type of handle which permits "easy operation" is debatable. For preferred options, see Figure 16.

Figure 16. Door Handles

e. Thresholds shall be beveled and shall not exceed three quarters of an inch in height, except that for B2 occupancies, thresholds, if any, shall be flush.

Explanation: Old-age and nursing homes for individuals who require physical assistance shall have flush thresholds at door openings. Even a beveled ¾" threshold can present an obstacle to a wheelchair individual with severe upper extremity impairment. Flush thresholds are preferred whenever possible. (Figure 17)

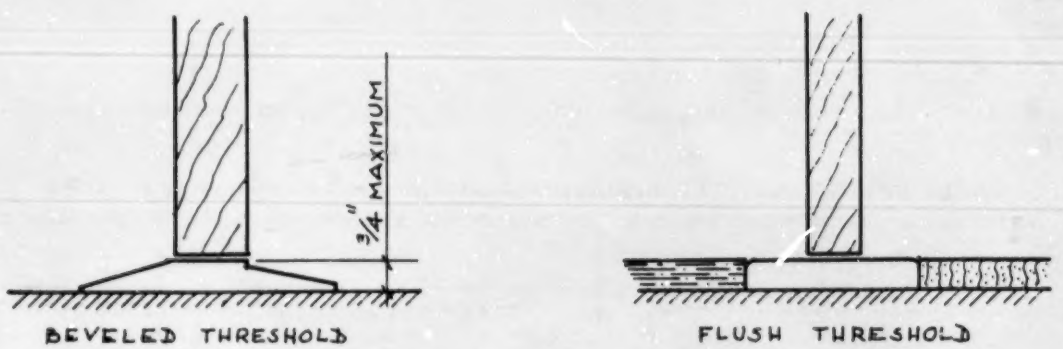


Figure 17. Threshold Height

f. Doors opening into hazardous areas from the path of travel shall be equipped with door handles that are identifiable to visually handicapped persons as opening into hazardous areas.

Explanation: The term "hazardous areas" is not specifically defined within the Code. Our understanding of hazardous areas includes loading platforms, boiler rooms, stairways, fire escapes, etc. A generally accepted means of identifying doors leading to hazardous areas is the utilization of knurled door handles or knobs. (Figure 16)

B214-5
(723.5)
Dwelling Units and Rooms for Transient Occupancy

B214-5.1
(723.5a)
General Requirements

Dwelling units and rooms for transient occupancy intended for use by the physically handicapped shall be arranged so as to provide convenient access to all parts of such spaces to permit the maximum use for living and working.

Explanation: This statement is indicative of the spirit with which this Code is promulgated. Rather than restrict the mobility of the physically handicapped, these provisions seek to widen access for the disabled "to all parts of such spaces." As such, we direct the reader back to provision B214-1, under "General Requirements" which states: ". . . facilities for the physically handicapped shall include plumbing, heating, electrical, ventilating, air conditioning, refrigerating equipment, elevators, dumbwaiters, escalators, walks, ramps, parking space, floor surfaces, water fountains, telephones, door hardware, and other fixtures and elements affecting the functional use of buildings by the physically handicapped." The intent of the Code is to make all those facilities used by the handicapped as accessible as possible. For example, in order to ventilate a room or to turn a light switch, the physically handicapped must be able to reach such controls. We recommend that not just the wording but the intent of these provisions be followed at all times. The preferred height for the placement of controls, switches, etc. intended for use by the physically handicapped is not more than 48 inches above floor level.

B214-5.2
(723.5b)
Toilet and Bath Facilities

Plumbing fixtures of a type as set forth in Section B214-7 shall be provided as in Table B214-5.2.

TABLE B214-5.2 (III-723) — REQUIRED NUMBER OF TOILET AND BATH FACILITIES

Occupancy Group	Plumbing Fixtures
B1 — permanent	A water closet, a lavatory, and a shower stall or bathtub in each dwelling unit required as per section B214-1d.
B1 — transient, with private toilet and bath facilities	A water closet, a lavatory, and a shower stall or bathtub for each sleeping room required as per section B214-1d.
B1 — transient, with semi-private or central toilet and bath facilities	A water closet and a lavatory for each multiple of two sleeping rooms, and a shower stall or bathtub for each multiple of six sleeping rooms, or fraction thereof, required as per section B214-1d.
B2 — permanent or transient, with semi-private or central toilet and bath facilities	A water closet and a lavatory for each multiple of two sleeping rooms, and a shower stall or bathtub for each multiple of six sleeping rooms, or fraction thereof, required as per section B214-1d.

Explanation: B1 – permanent structures of 40,000 square feet or more require toilet and bath facilities in 2 dwelling units or 2 per cent of total dwelling units, whichever is greater. B1 – transient structures of 20,000 square feet or more with private facilities require plumbing fixtures in 2 sleeping rooms or 2 per cent of total rooms, whichever is greater. The following table provides the number of water closets, lavatories, and bathtubs or shower stalls required for sleeping rooms in both B1 – transient and B2 occupancies with semi-private or central toilet and bath facilities:

TABLE C

REQUIRED NUMBER OF TOILET AND BATH FIXTURES IN B1 – TRANSIENT OR B2 OCCUPANCIES WITH SEMI-PRIVATE OR CENTRAL FACILITIES

Required Number of Sleeping Rooms	Required Number of Water Closets and Lavatories	Required Number of Bathtubs or Shower Stalls
1	1	1
2	1	1
3	2	1
4	2	1
5	3	1
6	3	1
7	4	2
8	4	2
9	5	2
10	5	2
11	6	2
12	6	2
13	7	3
14	7	3
15	8	3
16	8	3
17	9	3
18	9	3
19	10	4
20	10	4
21	11	4
22	11	4
23	12	4
24	12	4
25	13	5
26	13	5
27	14	5
28	14	5
29	15	5
30	15	5

B214-5.3
(723.5c)
Heating Equipment

Heating equipment shall be capable of maintaining an indoor temperature of at least 75°F.

Explanation: Although it is not stated specifically in the Code, thermostat controls for heating equipment should be placed within reach of the physically handicapped.

B214-5.4
(723.5d)
Cooking Equipment

a. Cooking equipment of the electric type shall be equipped with a lamp or lamps that will light automatically when a burner is in operation.

b. Cooking equipment of the gas type shall be equipped with pilot lights for the top burner and for the oven. An automatic device shall shut off the oven gas supply in the event of pilot outage.

c. Controls on cooking equipment shall be located so that they can be operated without reaching over or between burners.

Explanation: Cooking equipment with front-mounted controls is preferred. Those with controls on either side of the top burner are acceptable.

B214-5.5
(723.5e)
Electrical Equipment

a. Receptacles shall be located at least 24 inches above the floor.

Explanation: Elderly and handicapped persons would have difficulty bending down to reach down below 24 inches. Twenty-four inch above the floor receptacles are required throughout dwelling units and sleeping rooms for the handicapped.

b. Where the length of a passageway within a dwelling unit exceeds 15 feet, the lighting fixtures in the passageway shall be controlled by switches of the three-way type.

Explanation: This is a good practice to follow in all passageways, regardless of whether intended for use by handicapped or able-bodied persons. Two switches, one at each end of the passageway, control the same light fixture(s); a person switches the passageway illumination on as he enters and switches it off at the other end, preventing disorientation in the dark and eliminating the risk of injury.

B214-6
(723.6)
Plumbing Facilities for Accessory Public and Recreational Spaces

a. Where public toilet rooms are provided and the path of travel extends thereto, one toilet room for each sex shall contain at least one water closet and one lavatory of a type as set forth in section B214-7.

Explanation: The path of travel must extend to one toilet room for each sex, if public toilet rooms are included for public and recreational spaces. See B214-7 for water closet and lavatory design criteria.

b. Where public drinking fountains are provided and the path of travel extends thereto, at least one drinking fountain shall be of a type as set forth in section B214-7.h.

Explanation: Again, the path of travel must extend to at least one drinking fountain for the handicapped, if public drinking fountains are provided for public spaces. See B214-7.h for drinking fountain guidelines.

B214-7
(723.7)
Usability of Plumbing Fixtures

a. Adequate clear floor space shall be provided for access to, and safe use of plumbing fixtures for the physically handicapped. A clear floor space of at least 5 feet by 5 feet shall be available for turning a wheelchair in general toilet rooms, general bathrooms and general laundry rooms equipped with fixtures for the physically handicapped.

Explanation: The standard "builder's bathroom" of 5 feet by 7 feet, which is common to most multiple dwelling buildings, is too small. The minimum bathroom size intended for wheelchair use in a dwelling unit would have to be 7 feet by 7 feet 6 inches to meet with the 5 feet by 5 feet clear floor space criterion. Also, the 5 foot by 5 foot clear floor space in a public toilet room should be situated to provide ease of access to all facilities, but particularly to water closet stalls for the handicapped. (Figure 18)

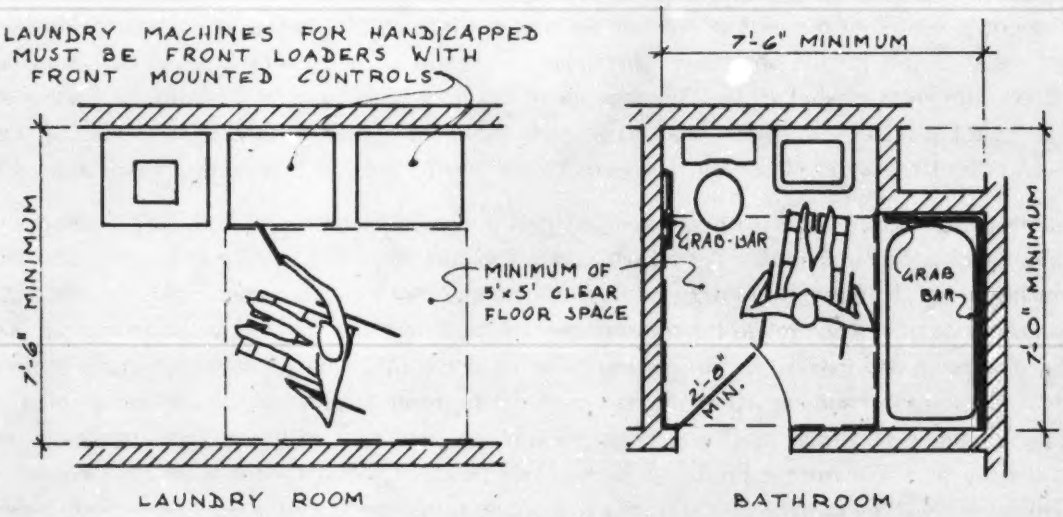


Figure 18. Minimum Floor Space Requirements

b. Faucet and operating levers at plumbing fixtures for the physically handicapped shall be of wristblade or other suitable type not requiring the use of the hand for operation. Self-closing lavatory faucets shall be prohibited.

Explanation: Faucets and operating levers which require twisting or turning motions of the hand are impossible to operate for those persons with upper extremity impairment, such as quadriplegics, and are painful or difficult to use for arthritics. The location of other fixtures for the physically handicapped in a toilet room is equally important. A height of 40 inches from the floor is preferred for the lower edge of mirrors, shelves, towel racks, disposal units, towel and sanitary napkin dispensers, etc. (Figure 19)

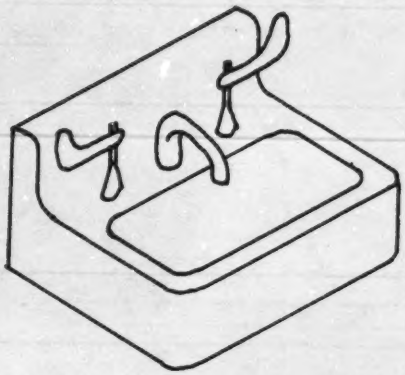


Figure 19. Wristblade Faucet Levers

c. Where water closets for the physically handicapped are installed in general toilet rooms, they shall be located in stalls at least 36 inches wide and 56 inches deep. Stall doors, where provided, shall swing out and shall afford a clear opening at least 32 inches in width. Where stall doors are provided the stalls shall be at least 66 inches deep. Where water closets for the physically handicapped in group B1 occupancy are provided in dwelling units or in general toilet rooms, a horizontal handrail or grab bar of adequate length and 1¼ inches in diameter shall be securely mounted 32 inches above the floor and conveniently located at one side of the water closet with at least 1½ inches of clearance from walls. Where water closets for the physically handicapped in group B2 occupancy are provided, they shall be equipped with seats located 19 to 20 inches above the floor, and horizontal handrails of adequate length and at least 1¼ inches in diameter shall be securely mounted approximately 32 inches above the floor, on each side of the water closet, with at least 1½ inches of clearance between handrails and adjacent walls.

Explanation: Stalls equipped with doors are preferred in general toilet rooms to insure privacy for the physically handicapped individual. A stall with door also provides more mobility since the stall itself must be 66 inches deep. It is also preferred to design the stall so that a handicapped individual has enough room on one side of the commode for transfer ease. A stall depth of 72 inches is even more preferable than the dimension required here. For general toilet rooms, it might be advisable to situate the water closet stall for the physically handicapped at the end of the toilet room because of the additional depth required. The design of the water closet itself is critical: the wall-mounted type with a narrow understructure which recedes sharply from the front is preferred for maximum ease of access for the wheelchair-bound. All water closets in dwelling units, sleeping rooms and public toilet rooms of B1 occupancy need be equipped with a single grab bar; those for B2 occupancies require dual grab bars. Seat height of 19 to 20 inches is also preferred in dwelling units, sleeping rooms and public toilet rooms of B1 occupancy. (Figures 20 & 21)

d. Where provided for the physically handicapped, wall-mounted and pedestal urinals shall be installed so that rim levels are no more than 21 inches above floor level; floor-set stall urinals shall be installed so that rim level is no higher than the toilet room floor level. (Figure 22)

e. Lavatories and kitchen sinks for the physically handicapped shall have at least 26 inches clearance between fixture bottom and floor for a depth of 10 inches so as to provide sufficient leg room, and the piping beneath the fixture shall be located or insulated so as to prevent injury to persons in wheelchairs.

Explanation: For maximum ease of use, the top of lavatories and kitchen sinks should have a maximum height from the floor of 31 to 33 inches. (Figure 23)

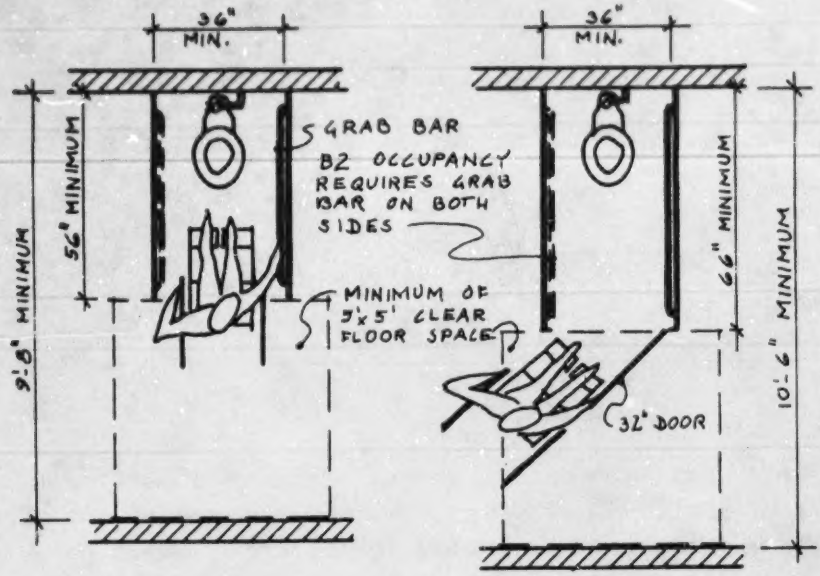


Figure 20. Minimum Toilet Stall Requirements

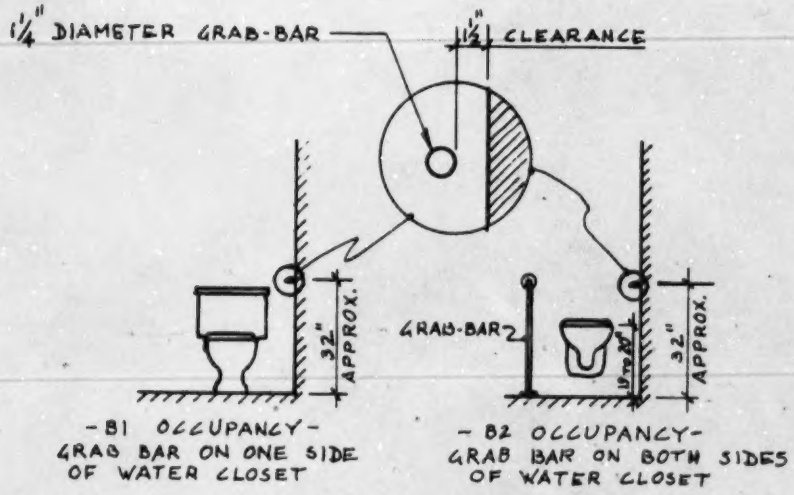

1¼" DIAMETER GRAB-BAR
1½" CLEARANCE
32" APPROX.
GRAB-BAR
32" APPROX.
-B1 OCCUPANCY- GRAB BAR ON ONE SIDE OF WATER CLOSET
-B2 OCCUPANCY- GRAB BAR ON BOTH SIDES OF WATER CLOSET

Figure 21. Grab-bar Detail and Wster Closet Height

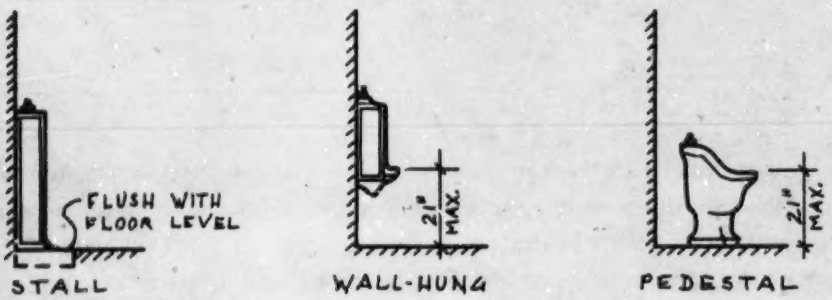


Figure 22. Urinal Rim Height

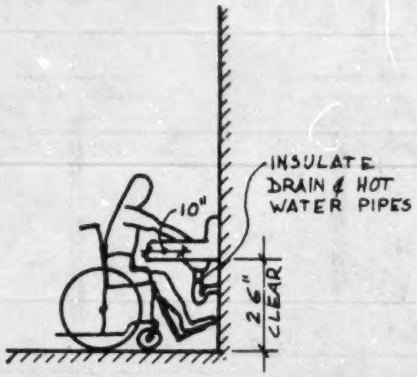


Figure 23. Lavatory and Sink Clearances

f. Where bathtubs are provided for the physically handicapped, grab bars 1¼ inches in diameter shall be securely mounted on two adjacent walls of the tub or i[illegible]nclosure, one bar installed horizontally 32 inches above the floor and the second bar installed vertically with its lower end at such height.

Explanation: For safety, it is preferred that grab bars be securely affixed to studs, joists, or blocking so that they have a weight-bearing capability of at least 250 pounds. Grab bars should never be secured to glass or metal tub enclosures. (Figure 24)

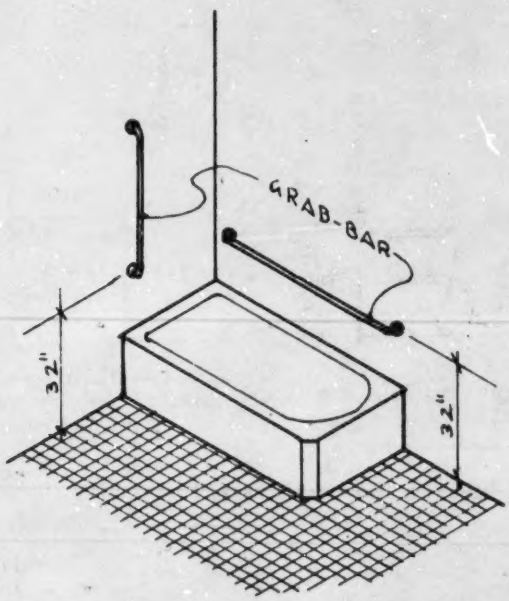


Figure 24. Bathtub Grab Bars

g. Shower stalls for the physically handicapped shall have non-slip type floors, adjustable type shower heads, and single-lever mixing valves designed to maintain constant water temperature under variable water pressure and temperature conditions. Mixing valves shall be installed approximately 40 inches above the stall floor and shall be operable from inside and outside the stall by a user at the threshold. Where such

shower stalls are provided in dwelling units of group B1 occupancy, grab bars 1¼ inches in diameter shall be securely mounted on two adjacent walls of the stall, one bar installed vertically with its lower end 32 inches above the floor. Where central bath facilities are provided for group B1 occupancy, a shower stall for the physically handicapped shall have at least 9 square feet of floor area, with minimum horizontal dimension of 3 feet, and a curb not exceeding 2 inches in height at the stall entrance. Where central bath facilities are provided for group B2 occupancy, a shower stall for the physically handicapped shall have at least 16 square feet of floor area, with minimum horizontal dimension of 4 feet, and a threshold not exceeding one half inch in height at the stall entrance. Where such shower stalls are provided in central bath facilities for group B1 or B2 occupancy, they shall be equipped with a folding seat securely attached to a sidewall of the stall, opposite the mixing valve, and installed so that the top of the seat when in the lowered position shall be 19 to 20 inches above the stall floor. Horizontal handrails 1¼ inches in diameter shall be securely mounted 32 inches above the floor on the rear wall and on the wall opposite the seat. Handrails and grab bars shall provide at least 1½ inches of clearance from walls.

Explanation: The "telephone" type shower head is preferred for most physically handicapped individuals as an adjustable and moveable water source. Where shower stalls are provided in dwelling units and sleeping rooms of B1 occupancy, a 9 square foot stall is preferred with minimum horizontal dimension of 3 feet and a threshold not exceeding one-half inch in height at the stall entrance. We also recommend the installation of a folding seat in the shower stall for B1 occupancies. Also for B1 occupancies, it is preferred to mount the mandated vertical handrail either on the wall containing the mixing valves or on the wall opposite. (Figure 25)

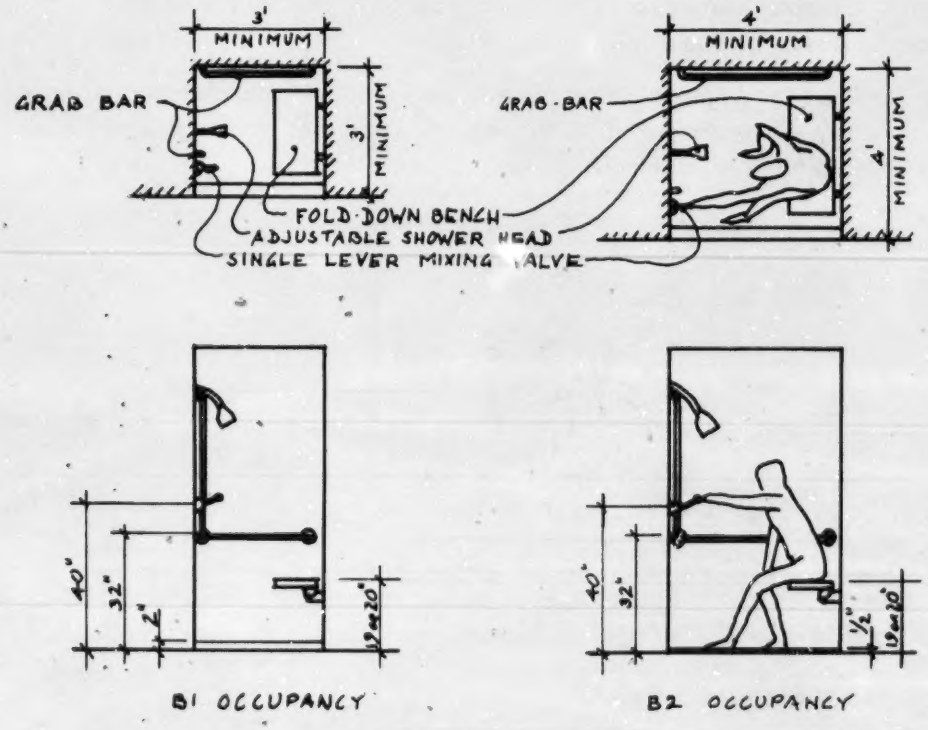


Figure 25. Minimum Shower Stall Requirements in Central Bath Facilities

h. Drinking fountains for the physically handicapped shall have jets located 31 to 33 inches above the floor and shall have basins projecting 8 inches to 12 inches from the front of the wall or cabinet on which they are mounted. Such drinking fountains shall have up-front jets and controls and shall be designed for hand operation or hand-and-foot operation.

Explanation: The design promulgated here enables the handicapped to reach both the jets and controls and thus to utilize the fountain. Recessed drinking fountains are not permitted. The up-front placement of both jets and controls is critical for the usability of such fountains. (Figure 26)

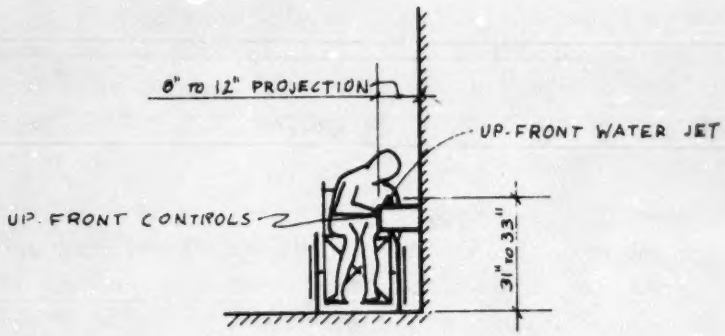


Figure 26. Drinking Fountain for the Handicapped

i. Where laundry facilities for group B1 occupancy dwelling units occupied by the physically handicapped are provided in a general laundry room, at least one laundry machine therein shall be of the front-loading type equipped with a side-hinged front door and front-mounted controls.

Explanation: Top-loading laundry machines prevent some physically disabled from being able to unload the machine when its cycle is completed. Also, even if a laundry machine is designed as above, if it is installed on a high platform, it will be out of reach for some handicapped. (Figure 27)

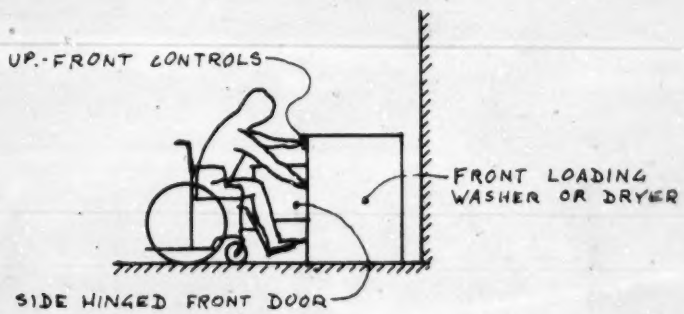


Figure 27. Laundry Machine for the Handicapped

B214-8
(723.8)
Telephones

Where public telephones are provided on the premises, at least one public telephone shall be suitable for the physically handicapped.

Explanation: This is a rather general provision, but basically the problem with most public telephones is that coin slots and dials are situated too high for the wheelchair-bound physically handicapped. Public telephones can be mounted for accessibility if the phone itself is situated so that the maximum height of the coin slot is 4'6" (54 inches) from floor level, and if a clear space under the cabinet of at least 26 inches from floor level is provided for. (Figure 28)

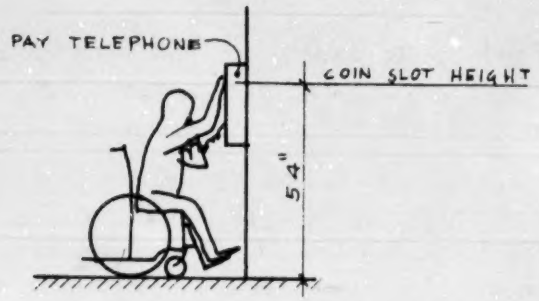


Figure 28. Public Telephone Height

C – GENERAL BUILDING CONSTRUCTION CODE

C103
(800.3)
EFFECTIVE DATE

This code shall take effect on January 1, 1973 and shall supersede the State Building Construction Code applicable to general building construction first promulgated on February 20, 1956, and which was last amended on January 1, 1971.

Explanation: The effective date of amendments calling for Facilities for the Physically Handicapped is January 1, 1971. All new building subject to the General Building Construction Code begun since this date must provide facilities for the handicapped if gross floor area and occupancy criteria are also met. If a building permit was issued or plans were approved prior to this date, such facilities are not mandatory. Facilities for the disabled are required if plans are approved or permits issued after January 1, 1971.

C104
(800.4)
PARTIAL INVALIDITY

If any term, part, provision, section, subdivision or paragraph of this Code shall be held unconstitutional, invalid, or ineffective, in whole or in part, such determination shall not be deemed to invalidate the remaining terms, parts, provisions, sections, subdivisions and paragraphs thereof.

Explanation: This clause prevents precedent-setting decisions. If a regulation regarding facilities for the disabled is held ineffective for a particular building due to hardship or other reason, other provisions concerning the disabled are still in effect, and such waiver only applies to the provision for this single building.

C105
(801)
SCOPE

C105-1
(801.1)
New Building

This code shall apply to buildings for business, mercantile, industrial, storage, assembly, institutional, and miscellaneous occupancies and uses, including their accessory structures and parts thereof, and to buildings containing mixed occupancies, but shall not apply to non-residential farm buildings outside of fire limits.

Explanation: The scope of the General Building Construction Code is limited since some kinds of buildings are not required to provide facilities for the physically handicapped. These include the following use groups: Moderate Hazard Industrial (Occupancy Group C3.2), such as aircraft maintenance and repair facilities, commercial laundries, motor vehicle maintenance and repair shops, and power generating plants; High Hazard Industrial (Group C3.3), such as explosives and fireworks manufacturing, oil refineries, paint manufacture, and wood furniture manufacture; Low Hazard Storage (Group C4.1), such as food products cold storage plants, passenger car storage facilities, and storage of noncombustible materials; Moderate Hazard Storage (Group C4.2), such as aircraft hangars, book, wood furniture, lumber storage, and warehouse and truck terminals; High Hazard Storage (Group C4.3), such as flammable gas or hydrogen storage and wholesale chemical storage; Institutions for those under restraint (Group C6.3), such as jails, mental asylums, and prisons; and miscellaneous uses (Group 7) such as temporary structures. All other types of General Building Construction which also meet the gross floor area criteria require facilities for the physically handicapped if such buildings are constructed after January 1, 1971. It should be noted that the State of New York is far behind other states in the country, many of which include facilities for the disabled in all building types except one and two family dwellings and temporary structures.

C105-2
(801.2)
Existing Buildings

C105-2.1
(801.2a)
General

This Code shall also apply to existing buildings, described in this section, to be occupied or used for business, mercantile, industrial, storage, assembly, institutional, and miscellaneous occupancies and uses, to their accessory structures, and to parts thereof, as if hereafter erected, but shall not apply to nonresidential farm buildings outside of fire limits.

Explanation: As in the provisions relative to Multiple Dwellings, if any one of the following four conditions is met for an existing building, then it must be treated as new construction and facilities for the handicapped might be required:

a. A building hereafter occupied for occupancies or uses described above, which building was not so occupied when this Code became applicable to the municipality in which the building is situated.

Explanation: When a municipality adopts this Code, if a building within that municipality changes its occupancy use to another use governed by this portion of the Code, then it might require facilities for the disabled.

b. A building moved into, or moved within, municipal limits subject to this Code which is to be occupied for occupancies or uses described above.

Explanation: Facilities for the physically handicapped might also be required in an existing building if the building itself were physically moved within existing municipal limits.

c. A building occupied for uses described above which is altered or repaired, when the cost of such alterations or repairs within any six-month period exceeds 50 per cent of the cost of replacement of the building at the beginning of that six-month period.

Explanation: For instance, the estimated cost to replace a building completely is four million dollars at the beginning of a given six-month period. If a determination were made by the building owner to alter the building instead and the cost of such alterations during a six-month period exceeds two million dollars (50%), such building would be subject to the regulations of this Code and might require facilities for the handicapped. This regulation also suggests that building owners must submit an estimated cost of replacement to some authority even if only repairs or alterations are being considered.

d. A building whose occupancy or use is changed to one of the following: business, mercantile, industrial, storage, assembly, institutional, and miscellaneous occupancy and use; or whose fire hazard classification is changed.

C105-3
(801.3)
Mixed Occupancy

A building which is occupied or used by two or more occupancies or uses classified in Section C202, or in part by residential occupancies, shall be deemed to be a building of mixed occupancy, and that part of the building occupied or used for other than residential purposes is regulated by this Code.

Explanation: The portion of the building with a residential occupancy group shall be regulated by the Multiple Dwelling portion of the Code, and the portion designated for use(s) under C202 is regulated by this Code.

C202
(811)
CLASSIFICATION OF BUILDINGS

Buildings for the purposes of this Code shall be classified by groups in respect to the occupancy or use, the type of construction, and the fire hazard, as set forth in Sections C202-1, C202-2, and C202-3, respectively, and in respect to the number and physical condition of the occupants in buildings of group C6 occupancy.

Explanation: Section C202-1 follows. Both Sections C202-2 and C202-3 concern type of construction relative to fire safety and fire hazard. In terms of establishing those buildings which require facilities for the handicapped, determination is based on both the occupancy group and the cumulative gross floor area of the building. These two determinants are discussed in full in Sections C202-1 and C215-1.

C202-1
(811.1)

Classification by Occupancy or Use Groups

Group C1 - Business: *Buildings in which the primary or intended occupancy or use is the transaction of* administrative, business, civic, or professional service, and where the handling of goods, wares, or merchandise, in limited quantities, is incidental to the primary occupancy or use. Newsstands, lunch counters, barber shops, beauty parlors, and similar service facilities are considered as incidental occupancies or uses.

Explanation: This group includes, but is not limited to, the following:

Administration buildings
Banks
Buildings for broadcasting and telecasting having a capacity of not more than 99 persons
Computer and data processing buildings
Indoor tennis courts designed for or intended to be used by not more than 99 persons, without seating for spectators
Laboratories, other than chemical
Library buildings having a capacity of not more than 99 persons
Office buildings
Professional offices
School administration buildings without classrooms
Telephone exchanges

Group C2 - Mercantile: Buildings in which the primary or intended occupancy or use is the display and sale to the public of goods, wares, or merchandise.

Explanation: This group includes, but is not limited to, the following:

Auto sales rooms
Display rooms
Gasoline service stations without maintenance or repair facilities
Markets and supermarkets
Stores, including paint stores without bulk handling facilities

Group C3 - Industrial: Buildings in which the primary or intended occupancy or use is the manufacture or processing of products of all kinds, including operations such as making, altering, assembling, bottling, canning, finishing, handling, mixing, packaging, repairing, cleaning, laundering, and similar operations.

Explanation: Only group C3.1 – Low Hazard Industrial buildings – might be required to include facilities for the handicapped. This group includes, but is not limited to, the following:

Car wash facilities
Dairy product processing
Dry cleaning plants using nonflammable solvents
Electric substations
Electrolytic processing excluding those that generate flammable or toxic gases

Electronic assembly plants
Foundries
Masonry product manufacturer
Waterpumping stations
Wineries

Group C4 - Storage: Buildings in which the primary or intended occupancy or use is the storage of or shelter for goods, merchandise, vehicles, or animals.

Explanation: Not required to provide facilities for the physically handicapped.

Group C5 - Assembly: Buildings in which the primary or intended occupancy or use is the assembly for amusement, athletic, civic, dining, educational, entertainment, patriotic, political, recreational, religious, social, sports, or similar purposes, subclassified as follows:

Group C5.1 for not more than six hundred persons;
Group C5.2 for more than six hundred, but not more than fifteen hundred persons;
Group C5.3 for more than fifteen hundred persons;
Group C5.4 churches, synagogues, mosques and similar places of worship;
Group C5.5 schools, colleges and similar places of education.

Explanation: The above groups, based on number of persons, include but are not limited to, the following:

Amusement park buildings to which the public has access
Armories
Art galleries
Assembly halls
Auditoriums
Bath houses
Bowling alleys
Club rooms
Coliseums and stadiums
Courtrooms
Dance halls
Exhibition halls or buildings
Grandstands
Gymnasiums
Indoor tennis courts with seating for spectators
Lecture halls
Libraries and broadcasting and telecasting stations having a capacity of more than 99 persons
Lodge halls or rooms
Mortuary chapels
Motion picture theaters
Museums

Nightclubs
Passenger stations and terminals of air, surface, underground and marine public transportation facilities
Recreation centers, halls and piers
Restaurants
Skating rinks
Tents and similar shelters
Theaters

Group C6 - Institutional: Buildings in which the primary or intended occupancy or use is for persons domiciled or detained under supervision, subclassified as follows:

Group C6.1 for persons whose movements are not limited and have a normal sense of perception.
Group C6.2 for persons whose movements are limited because of illness, physical or mental handicap, except nursing and old-age homes regulated by the State Building Construction Code applicable to multiple dwellings.
Group C6.3 for persons detained or confined in a mental hospital or for correctional or penal purposes.

Explanation: Group C6.3 occupancies are not required to include facilities for the handicapped. This classification is subdivided according to the movement of the occupants, and includes, but is not limited to, the following:

C6.1 - Outpatient clinics without domiciliary facilities
Day-care centers for children 3 years of age or over
C6.2 - Child-caring institutions with overnight sleeping facilities
Clinics with sleeping rooms
Day-care centers for children under 3 years of age
Hospitals
Infirmaries
Sanitariums

Group C7 - Miscellaneous: Nonresidential buildings in which the primary or intended occupancy or use is not included in groups C1 to C6 inclusive, accessory structures attached to, part of, or supported by, the buildings; buildings temporary in character.

Explanation: Not required to have facilities for physically handicapped.

C215
(824)
FACILITIES FOR THE PHYSICALLY HANDICAPPED

C215-1
(824.1)
General Requirements

a. For the purpose of this section, facilities for the physically handicapped shall include plumbing, heating, electrical, ventilating, air conditioning, refrigerating equipment, elevators, dumbwaiters, escalators, walks, ramps, parking space, floor surfaces, water fountains, telephones, door hardware, and other fixtures and elements affecting the functional use of buildings by the physically handicapped.

Explanation: Attention is directed to the intent of this provision. The final wording here – other fixtures and elements – should include the situating of items within a building so that they are within easy reach. Consideration should be afforded the following average requirements of wheelchair-users: the average vertical reach of an adult functioning in a wheelchair is 60 inches measured from the floor level; the average diagonal reach is 48 inches from floor level; and the average horizontal reach is approximately 31 inches. Such requirements are important to the placement of such items as electrical switches, other controls, fire alarms, etc.

b. Buildings set forth in Table C215-1 shall be equipped with facilities to provide access and a safe environment for the physically handicapped. Cumulative gross floor area shall be the sum of the gross floor areas of all floor levels of one or more buildings of the same occupancy on the same premises.

Explanation: Cumulative gross floor area includes the sum of the gross floor areas of all floor levels of one or more buildings of the same occupancy on the same premises. The Code defines the word "premises" as follows: "a lot, plot, or parcel of land including the building or structures thereon." Such structures as office complexes, shopping malls, industrial parks, recreation and health care facilities are often an amalgam of smaller buildings housed under one "premises." When such structures are determined to be part of a "premises," then the cumulative gross floor area of the premises and not the floor area of individual structures is the criterion for facilities for the handicapped.

c. The provisions of this section shall be supplemental to, and take precedence over other less restrictive provisions of this Code.

Explanation: This regulation clearly eliminates the possibility of less restrictive "loopholes" taking precedence over provision requirements for the physically handicapped.

d. Buildings that require facilities for the physically handicapped shall be as set forth in Table C215-1:

TABLE C215-1 (I-824) – BUILDINGS THAT REQUIRE FACILITIES FOR THE PHYSICALLY HANDICAPPED

Occupancy Group	Where the Cumulative Gross Floor Area Exceeds:
Col. 1	Col. 2
C1, C2, C3.1	50,000 square feet[1]
C5.1, C5.2, C5.3	5,000 square feet
C5.4	5,000 square feet
C5.5 and C6.2	Required in all cases
C8.1[2]	20,000 square feet
Mixed occupancy	[3]

[1] For exception, see Section C215-1e.

[2] Where determination by per cent results in a number containing a decimal of .5 or more, use the next higher number.

[3] See Section C215-1i.

Explanation: Basically, such Business structures as administrative buildings, banks, office buildings, professional offices, non hazardous industrial buildings; such Mercantile structures as display rooms, supermarkets, stores, shopping centers; and such Low Hazard Industrial structures as electronic assembly plants and foundries shall provide facilities for the physically handicapped if the cumulative gross floor area of such building(s) exceeds 50,000 square feet. However, the 50,000 square feet criterion absolves many smaller such buildings from complying with this Code. It is recommended that C1, C2, and C3.1 buildings which do not require facilities for the disabled at least consider including one entrance for wheelchair access. Such Assembly buildings as public amusement parks, auditoriums, coliseums and stadiums, courtrooms, gymnasiums, motion picture theaters, museums, nightclubs, passenger transportation terminals, recreation centers, restaurants, theaters, and places of worship are required to provide facilities for the physically handicapped if the cumulative gross floor area of such structures exceeds 5,000 square feet. We believe that this is a more realistic square footage criterion.

All new building of schools, colleges, universities, and similar Educational facilities (C5.5), as well as Institutions for persons whose movements are limited because of illness, physical or mental handicap (C6.2) except nursing and old-age homes regulated by the Multiple Dwellings Code are required to provide facilities for the physically handicapped no matter what their dimensions. However, Institutions such as outpatient clinics without domiciliary facilities and day-care centers for children 3 years of age and over (C6.1) shall have facilities for the physically handicapped if the total gross floor area of such buildings exceeds 20,000 square feet. In addition to the above requirements, Public Law 90-480 requires that facilities for the physically handicapped must be included in all public buildings constructed, altered, leases, or financed by the Federal government or with Federal assistance; and, according to Chapter 656 (1972) and Chapter 449 (1974) of the Laws of New York State, all public buildings in the State or within municipalities of the State constructed, altered, or assisted by State or municipal funds must provide facilities for the disabled regardless of square foot requirements.

e. Facilities for the physically handicapped shall be provided for at least 25 per cent of the occupied space in a building of C1, C2, and C3.1 occupancy, except as follows: Such facilities are not required for public spaces having a seating capacity of less than 100 persons.

Explanation: This pertains to meeting rooms, reading rooms, etc., within a building and not the total area of a C1, C2, or C3.1 occupancy building(s). Also, this exception does not pertain to C5 Assembly buildings with seating for less than 100 persons; facilities for the disabled are determined in the C5 group by square foot or intended use criteria only

Such facilities are not required for buildings designed for more than one tenant, where such tenant space is 20,000 square feet or less in area, and where the tenant has no access to other parts of the building.

Explanation: Suppose a low hazard industrial building contains 60,000 square feet of space, but it is occupied by four separate tenants, each of whom would utilize 15,000 square feet of space. Each tenant space would be a separate concern with none of the tenants having access to the other tenant spaces. Although this would be a C3.1 occupancy structure of more than 50,000 square feet of cumulative gross floor area, facilities for the physically handicapped would not be required.

Such facilities shall be provided for at least 25 per cent of a tenant space exceeding 20,000 square feet in a building designed for more than one tenant, where the tenant has no access to other parts of the building.

Explanation: Suppose a low hazard industrial building is designed for four separate tenants and the total cumulative gross floor area is 75,000 square feet. Three of these tenants occupy 15,000 square feet of space each, and the fourth is housed in a 30,000 square foot area. Facilities for the physically handicapped

would not be required for the spaces occupied by the three tenants with 15,000 square feet of space; however, although the fourth tenant with 30,000 square feet of space has no access to the other tenant spaces within the premises, facilities for the handicapped would be required for at least 25 per cent of this fourth tenant space.

f. In buildings of group C5.1, C5.2, C5.3, and C5.4 occupancies, assembly spaces shall have a level area reserved for use by the physically handicapped and such area shall be sufficient for at least two wheelchairs or two per cent of the seating capacity, whichever is larger. The clear area for each wheelchair shall be not less than 60 inches from front to back and not less than 36 inches from side to side. The location of the area shall be such as to permit normal participation by the physically handicapped without obstructing passage to aisles or exits.

Explanation: While wheelchair seating should not obstruct passage to aisles or exits, it is preferable to locate such seating as near as possible to aisles, exits, the path of travel. (Figure 29)

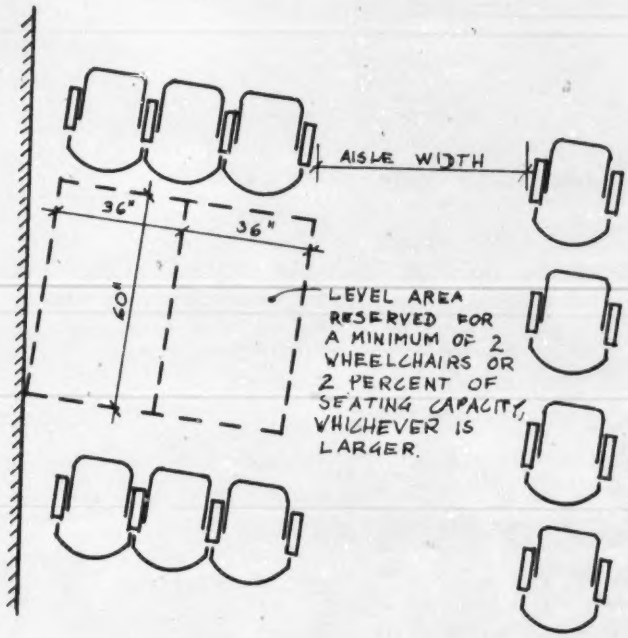

AISLE WIDTH
36"
36"
60"
LEVEL AREA RESERVED FOR A MINIMUM OF 2 WHEELCHAIRS OR 2 PERCENT OF SEATING CAPACITY, WHICHEVER IS LARGER.

Figure 29. Wheelchair Seating in Assembly Spaces

In the following tables, where determination of the minimum number of wheelchair spaces results in a number containing a decimal of .5 or more, the next highest number is used.

TABLE D — PHYSICALLY HANDICAPPED SPACE REQUIREMENTS

C5.1 and C5.4 Occupancy
(Cumulative Gross Floor Area Greater than 5000 Square Feet)

Total Seating Capacity		Space Reserved for Physically Handicapped	
		Minimum No. of Spaces for Wheelchairs	Minimum Square Feet of Level Floor Area Required
From	To		
up to	124	2	30
125	174	3	45
175	224	4	60
225	274	5	75
275	324	6	90
325	374	7	105
375	424	8	120
425	474	9	135
475	524	10	150
525	574	11	165
575	599	12	180

TABLE E — PHYSICALLY HANDICAPPED SPACE REQUIREMENTS

C5.2 and C5.4 Occupancy
(Cumulative Gross Floor Area Greater than 5000 Square Feet)

Total Seating Capacity		Space Reserved for Physically Handicapped	
		Minimum No. of Spaces for Wheelchairs	Minimum Square Feet of Level Floor Area Required
From	To		
600	624	12	180
625	674	13	195
675	724	14	210
725	774	15	225
775	824	16	240
825	874	17	255
875	924	18	270
925	974	19	285
975	1024	20	300
1025	1074	21	315
1075	1124	22	330
1125	1174	23	345
1175	1224	24	360
1225	1274	25	375
1275	1324	26	390
1325	1374	27	405
1375	1424	28	420
1425	1474	29	435
1475	1499	30	450

TABLE F – PHYSICALLY HANDICAPPED SPACE REQUIREMENTS

C5.3 and C5.4 Occupancy
(Cumulative Gross Floor Area Greater than 5000 Square Feet)

Total Seating Capacity		Space Reserved for Physically Handicapped	
From	To	Minimum No. of Spaces for Wheelchairs	Minimum Square Feet of Level Floor Area Required
1500	1524	30	450
1525	1574	31	465
1575	1624	32	480
1625	1674	33	495
1675	1724	34	510
1725	1774	35	525
1775	1824	36	540
1825	1874	37	555
1875	1924	38	570
1925	1974	39	585
1975	2024	40	600
2025	2074	41	615
2075	2124	42	630
2125	2174	43	645
2175	2224	44	660
2225	2274	45	675
2275	2324	46	690
2325	2374	47	705
2375	2424	48	720
2425	2474	49	735
2475	2524	50	750
5,000		100	1500
10,000		200	3000
20,000		400	6000

g. In buildings of group C6.1 occupancy, at least two sleeping rooms or 2 per cent of the total number of such rooms, whichever is larger, shall be equipped with facilities for the physically handicapped.

Explanation: Group C6.1 occupancy includes institutions for persons whose movements are not limited and who have a normal sense of perception such as outpatient clinics without domiciliary facilities or day-care centers for children 3 years of age or over. In the following table, where determination results in a number containing a decimal of .5 or more, the next highest number is used.

TABLE G.

C6.1 Occupancy
(Cumulative Gross Floor Area Greater than 20,000 Square Feet)

Total Number of Sleeping Rooms		Number of Rooms Which Require Facilities for the Physically Handicapped
From	To	
up to	124	2
125	174	3
175	224	4

TABLE G. (Continued)

C6.1 Occupancy
(Cumulative Gross Floor Area Greater than 20,000 Square Feet)

Total Number of Sleeping Rooms		Number of Rooms Which Require Facilities for the Physically Handicapped
From	To	
225	274	5
275	324	6
325	374	7
375	424	8
425	474	9
475	524	10

h. In buildings of Group C6.2 occupancy, at least 10 per cent of the total number of sleeping rooms shall be equipped with facilities for the physically handicapped.

Explanation: Group C6.2 occupancy includes such buildings as hospitals, clinics with sleeping rooms, infirmaries, sanitariums, and other institutions for persons whose movements are limited because of illness, physical or mental handicap. In the following table, where determination results in a number containing a decimal of .5 or more, the next highest number is used.

TABLE H.

C6.2 Occupancy

Total Number of Sleeping Rooms		Number of Rooms Which Require Facilities for the Physically Handicapped
From	To	
5	14	1
15	24	2
25	34	3
35	44	4
45	54	5
55	64	6
65	74	7
75	84	8
85	94	9
95	104	10
105	114	11
115	124	12
125	134	13
135	144	14
145	154	15
155	164	16
165	174	17
175	184	18
185	194	19
195	204	20

i. In a building of mixed occupancy where the sum of the areas of each of the occupancies is more than that indicated in Table C215-1 for the largest single occupancy of the mixed occupancy, facilities for the physically handicapped shall be required in such largest occupancy, except as set forth in paragraph e of this section.

Explanation: Suppose a building was a mixed occupancy of C1 Business and C2 Mercantile. The C1 Business portion occupies 20,000 square feet and the C2 Mercantile portion 40,000 square feet. Their sum is 60,000 square feet. Normally, a C2 Mercantile building must be 50,000 square feet or more to require facilities for the handicapped. But since the sum of both occupancies of the mixed occupancy in this case is greater than that indicated in Table C215-1 for the largest single occupancy (C2 - 50,000 square feet), then the C2 Mercantile portion (the largest single occupancy) requires facilities for the physically handicapped.

C215-2
(824.2)
Path of Travel

C215-2.1
(824.2a)
General Requirements

a. There shall be at least one path of travel consisting of walks, ramps, lobbies, elevators or passageways, or a necessary combination thereof, that provides free and unobstructed access to, and exit from the building. Path of travel shall extend from a public or private roadway, or from an automobile parking space reserved for use by the physically handicapped, to occupied spaces and public spaces within buildings set forth in Table C215-1.

Explanation: The key words here are "provides free and unobstructed access to, and exit from the building." While any combination of the above listed components of the path of travel is acceptable, it is preferable that the path of travel be the most direct route possible from the parking space or roadway to the building. (Figure 30)

b. The distance along the path of travel from a public or private roadway, or from an automobile parking space reserved for use by the physically handicapped, to a building entrance door shall not exceed 200 feet.

Explanation: For many physically disabled, 200 feet of distance can be an obstacle in itself. While this may be an acceptable distance for some, the shortest possible path of travel is preferred.

c. Path of travel shall have a durable, finished surface. Steps or abrupt changes in level are not permitted.

Explanation: Many of the difficulties related to providing a path of travel for the physically handicapped can be solved through proper site development. Such a path of travel may be provided and aesthetic qualities may be maintained at the same time through the use of winding walks, terracing, retaining walls, etc. The best and most commonly used materials are poured concrete and asphalt concrete. The surfaces may be scored or broom textured to reduce the possibility of slipping. Good design and workmanship are required so that wherever an expansion joint, ramp, or curb cut occurs in the path of travel, it shall never have a bump or projection above the adjoining surface greater than 5/8 of an inch. We recommend that the requirements of the New York State Curb Cut Law (effective January 1, 1976) be

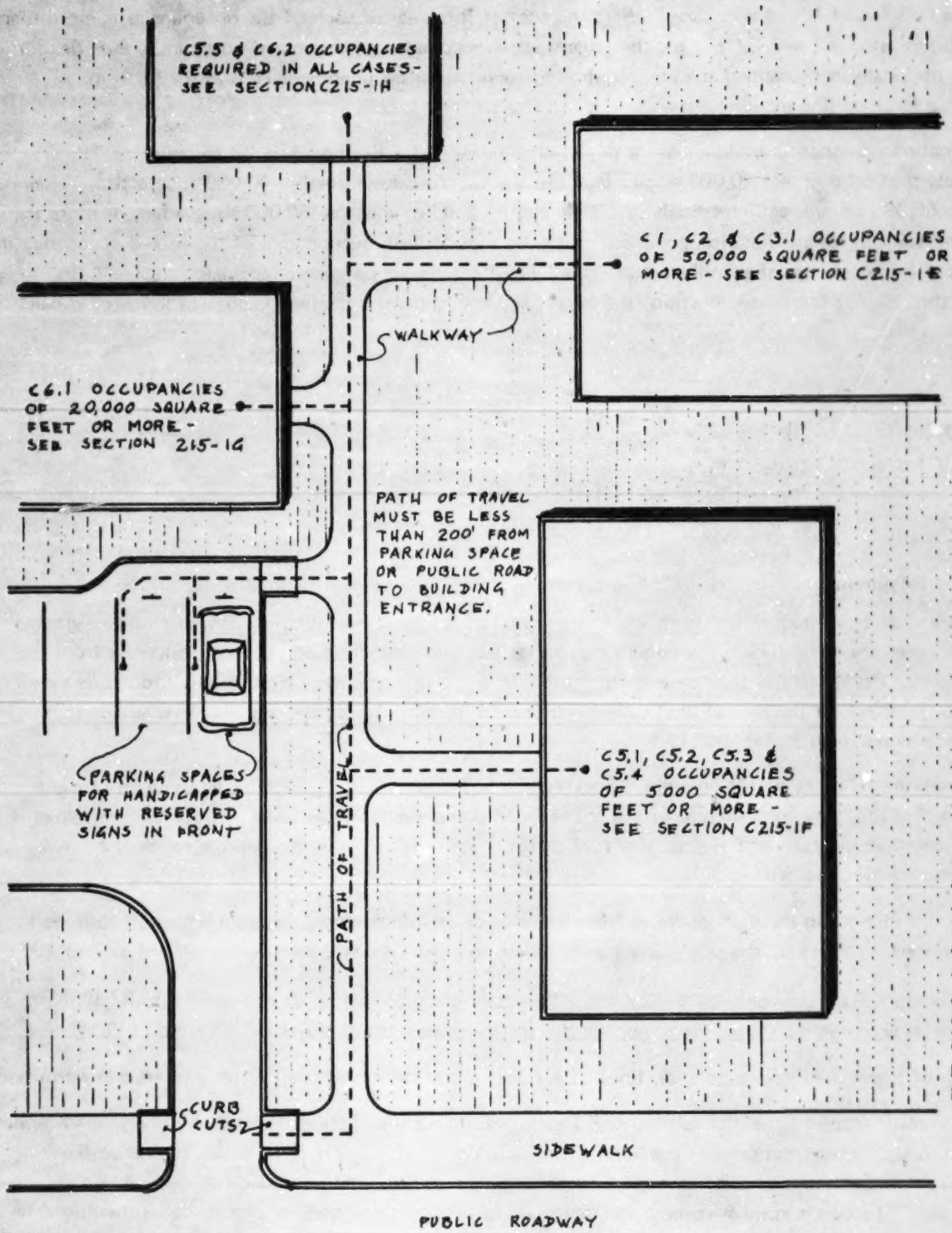

C5.5 & C6.2 OCCUPANCIES REQUIRED IN ALL CASES - SEE SECTION C215-1H
C1, C2 & C3.1 OCCUPANCIES OF 50,000 SQUARE FEET OR MORE - SEE SECTION C215-1E
WALKWAY
C6.1 OCCUPANCIES OF 20,000 SQUARE FEET OR MORE - SEE SECTION 215-1G
PATH OF TRAVEL MUST BE LESS THAN 200' FROM PARKING SPACE OR PUBLIC ROAD TO BUILDING ENTRANCE.
C5.1, C5.2, C5.3 & C5.4 OCCUPANCIES OF 5000 SQUARE FEET OR MORE - SEE SECTION C215-1F
PARKING SPACES FOR HANDICAPPED WITH RESERVED SIGNS IN FRONT
PATH OF TRAVEL
CURB CUTS
SIDEWALK
PUBLIC ROADWAY

Figure 30. Path of Travel and Buildings that Require Facilities for the Handicapped

adhered to according to Engineering Instruction 75-90, Appendix, pages 1 through 6. Preferred curb cut dimensions are a maximum grade ratio of 1 in 12 and a minimum width of 48 inches. A 5/8 inch or greater bump would be difficult to negotiate and hazardous for some wheelchair users. (Figure 31)

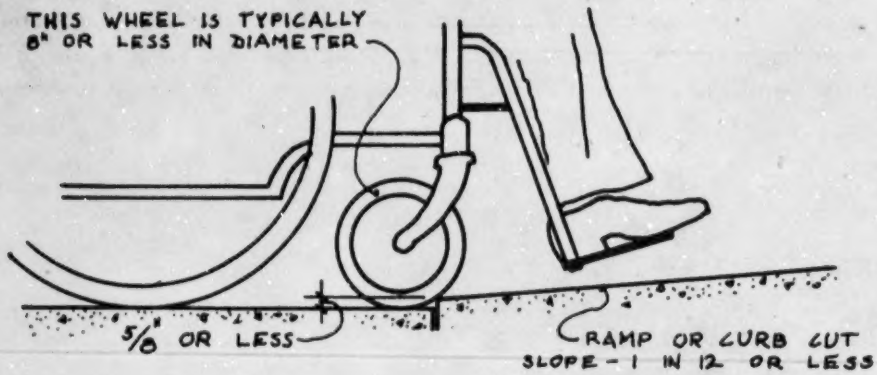


Figure 31. Maximum Height of Curb Cut Lip

d. Path of travel shall extend to at least one public toilet room for each sex and to at least one public drinking fountain.

e. Guardrails at least 32 inches in height shall be provided at the sides of the path of travel where the adjoining surface drops more than 12 inches within three feet thereof. One dimension of opening in guardrail shall not exceed 6 inches.

Explanation: This is an obvious and sensible deterrent to injury caused by falls or wet, icy conditions which present serious hazard to all persons. The Code specifies elsewhere that all ramps must have handrails; however, no mention is made of building entry platforms. We feel that any entry platform along the path of travel which is 12 inches above the adjoining surface should also be protected by guardrails. (Figure 32)

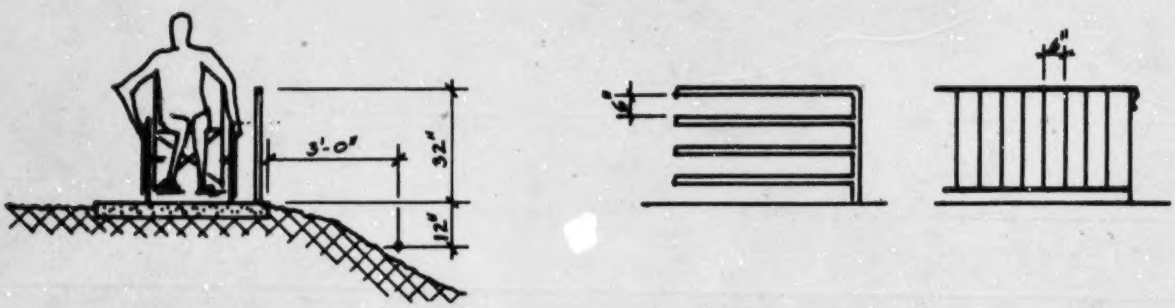


Figure 32. Guardrail Requirements

f. Path of travel shall be provided with artificial light as set forth in Section C507-2.1b.

Explanation: This rule reads as follows: "During periods of occupancy, whenever natural light is lacking or insufficient for safe travel, electric light of intensity sufficient for safe travel shall be provided throughout exits, and for spaces to which the public has access or in which persons work, including elevators, escalators, and manlifts." This regulation insures sufficient artificial light for interior portions of the path of travel. Artificial lighting of walks and ramps, as well as parking spaces for the physically handicapped, is also preferred.

C215-2.2
(824.2b)
Walks

a. Walks shall have a width of at least 48 inches.

Explanation: A width of 48 inches will allow a person in a wheelchair to make a complete 180° turn if he so desires; it also allows oncoming pedestrians to pass by. However, two wheelchairs approaching each other may not have enough room to pass. A walk width of 60 inches is preferred. (Figure 33)

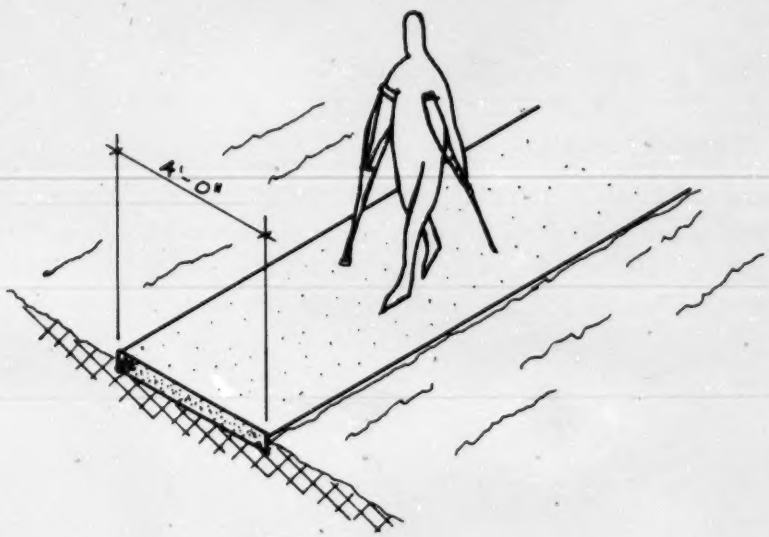


Figure 33. Minimum Width of Walkways

b. Gradients of walks shall not exceed 1 in 20. Where the gradient exceeds 1 in 20, the path shall be classified as a ramp.

Explanation: Any part of the path of travel which meets all other requirements pertaining to walks and path of travel and which is dead level or has a gradient of 1 in 20 or less is to be considered a walk. If the slope is steeper than 1 in 20, yet not steeper than 1 in 12, the path of travel must be classified as a ramp. Under no conditions shall the slope of any portion of the path of travel for the handicapped exceed 1 in 12.

C215-2.3
(824.2c)
Ramps

a. Ramps shall have a width of at least 36 inches provided the minimum clearance between handrails is 36 inches. For buildings of group C6.2 occupancy, ramps shall have a width of at least 48 inches, except that 36 inches is permitted where ramps and adjoining steps connect the same levels.

Explanation: The most important requirement here is that the clear distance of 36 inches between railings always be maintained; the ramp itself must be at least 36 inches wide, but in many cases it should be somewhat wider to provide anchorage for the handrails which must always be a minimum of 36 inches clear distance apart. The minimum ramp width acceptable to the Veterans Administration under Public Law 702, which sets forth requirements for homes for seriously disabled veterans, is 3'6". We feel that this minimum width is much more preferable and realistic than 3'0". (Figure 34)

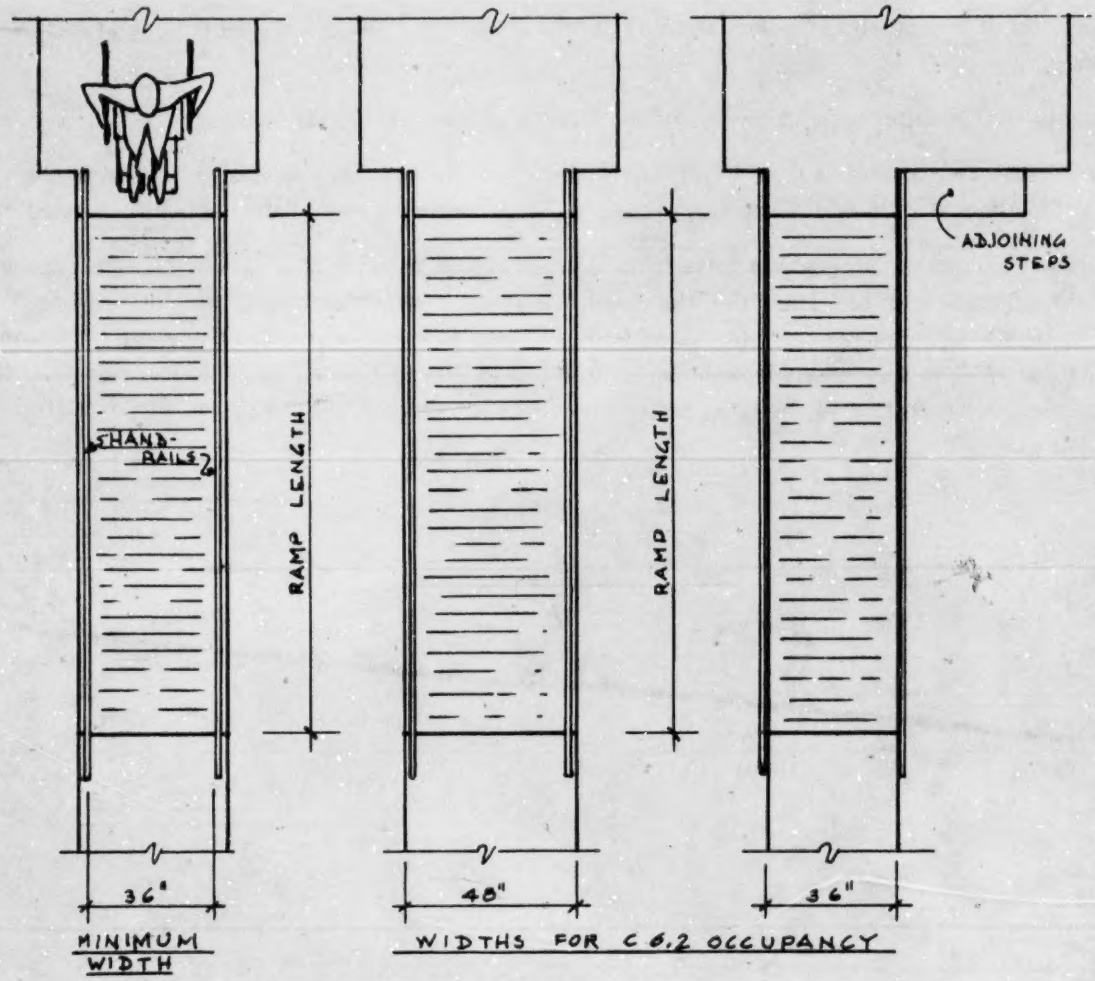


Figure 34. Widths of Ramps

b. Ramps shall have a non-skid surface and a gradient not exceeding 1 in 12.

Explanation: Figure 35.

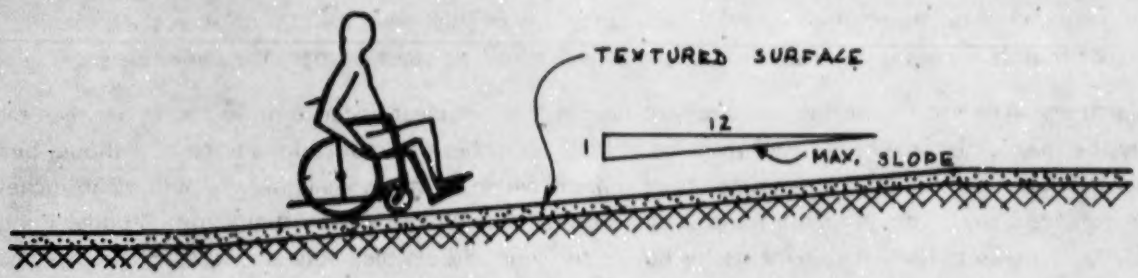


Figure 35. Maximum Slope of Ramps

c. At each end of a ramp and at a door opening upon a ramp, there shall be a level landing at least 4 feet long.

Explanation: For a better description of landing requirements see C215-2.3f below.

d. Intermediate level landings at least 4 feet long shall be provided so that the sloping portion of the ramp between landings shall have a length not exceeding 2½ times the inverse of the gradient expressed in feet.

Explanation: The maximum gradient for a ramp allowed by this building code is 1 in 12 or 1/12; the inverse of that gradient is 12. Therefore, the maximum length allowed for a ramp of 1 in 12 slope is (12 x 2.5) or 30 feet. Furthermore, this code defines a ramp as having a gradient anywhere from 1 in 12 to 1 in 20, or 1/20; as the denominator increases from 12 to 20 the gradient becomes less steep and the length of the sloping portion of the ramp between landings is increased to a maximum of (20 x 25) or 50 feet. (Figure 36)

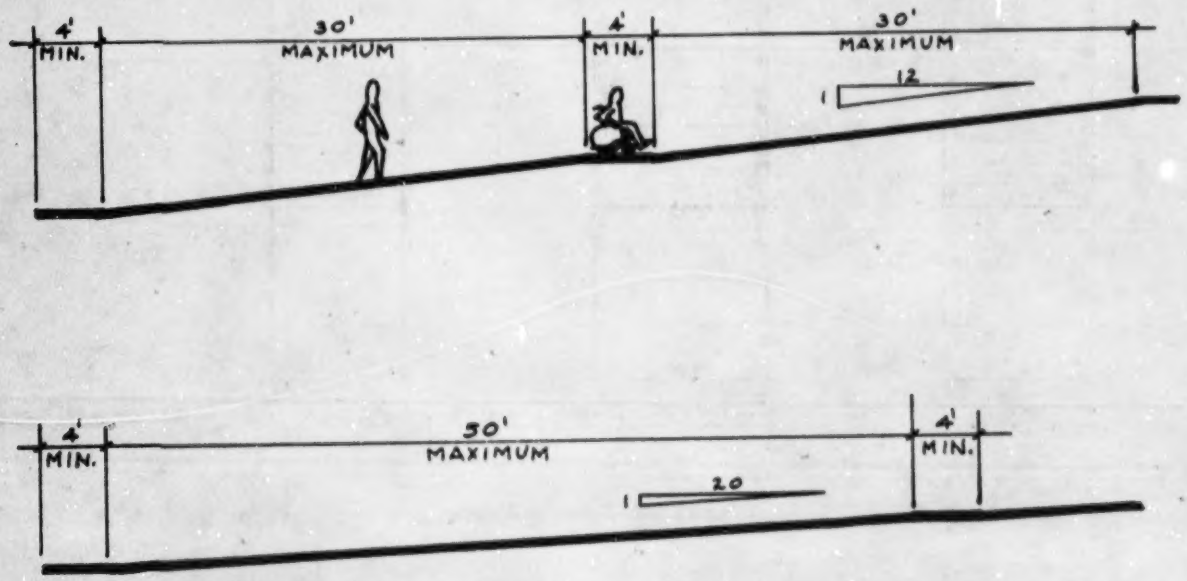


Figure 36. Maximum Length of Ramps Between Platforms

e. A level landing, with a minimum linear dimension of 4 feet, shall be provided wherever a sharp change in direction occurs in a ramp.

Explanation: A sharp change in direction would be any such change exceeding a 45-degree angle. (Figure 37)

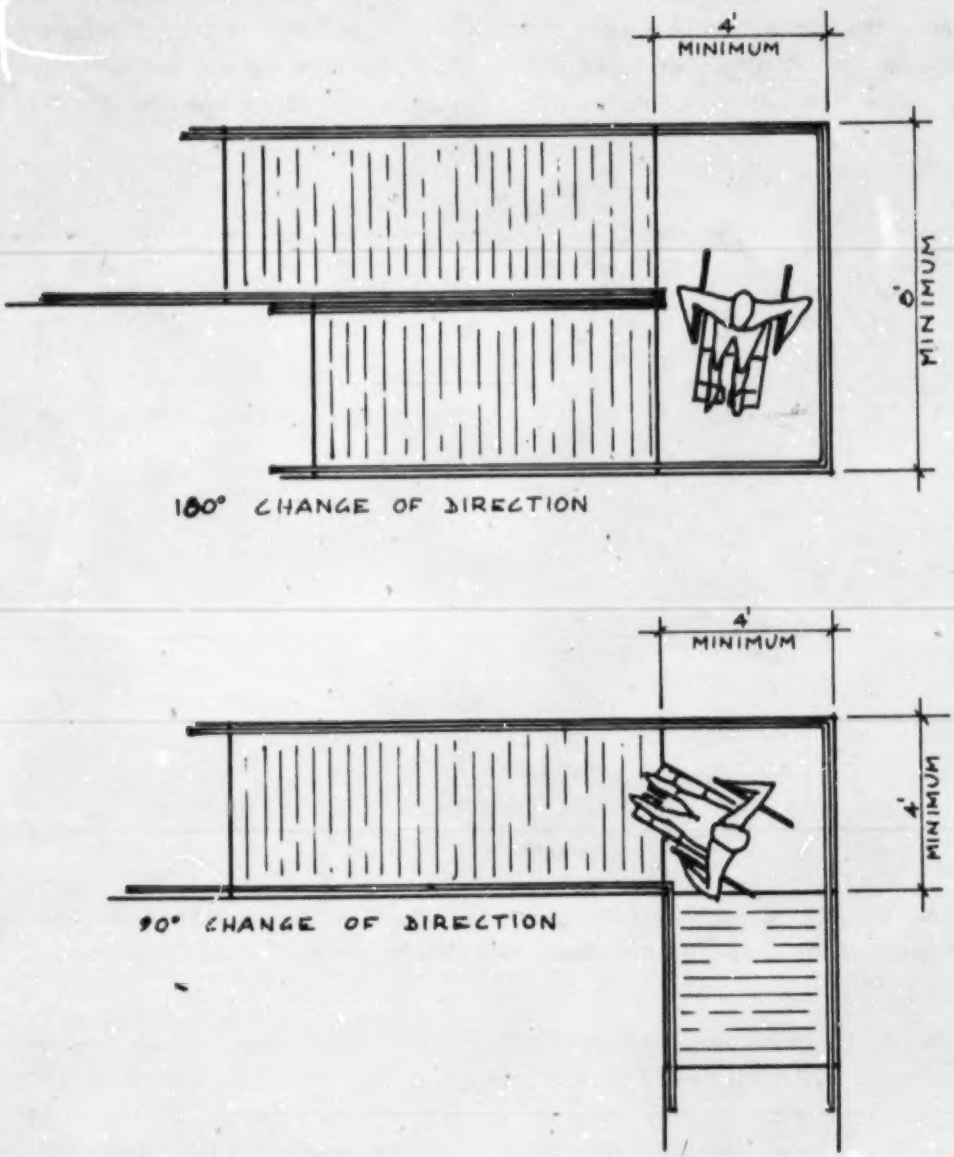


Figure 37. Minimum Landing Dimensions for Sharp Change of Direction

f. Where a door opens upon a landing, there shall be a level area having a minimum dimension of 4 feet and extending at least one foot beyond the jamb on the latch side. The door shall not decrease the required dimension of a landing for any arc of its swing.

Explanation: The area of the landing which is swept over as the door opens fully to ninety degrees is not to be considered as any part of the required 4 foot minimum dimension. This minimum dimension begins at the edge of the latch side of the door and extends to the platform edge. The one-foot dimension beyond the jamb on the latch side is very necessary to provide clearance for a wheelchair-confined person to approach and open a door without excessive back and forth maneuvering, and also minimizes the possibility of the wheelchair-user's tumbling from the chair as he leans forward to grasp the door handle. (Figure 38)

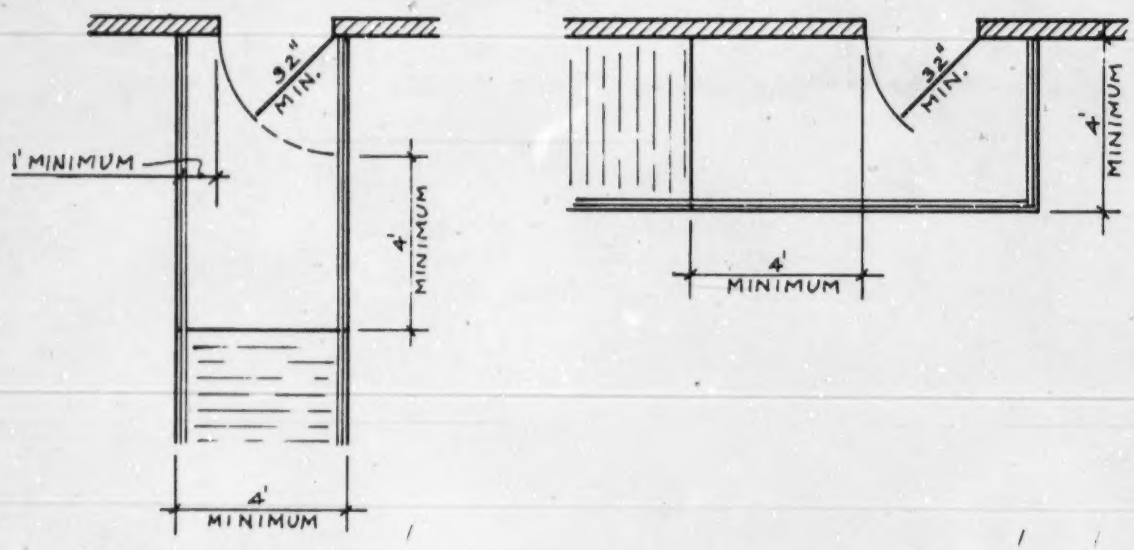


Figure 38. Minimum Door/Platform Clearances

g. Ramps shall have handrails 32 inches high on both sides. Handrails shall extend at least one foot beyond the top and bottom of the ramp. Handrail extensions shall be designed so that they do not become a hazard.

Explanation: These handrails are very helpful in assisting elderly or handicapped people who have difficulty negotiating an inclined surface. These railings also protect wheelchair users from rolling off the ramp. The handrail extensions beyond the top and bottom of the ramp ease the transition from horizontal to inclined plane and vice versa. Handrail extensions should not project into any landings or walkways. Where possible, handrail extensions should return to adjacent walls. See also provision C215-2.1f. (Figure 39)

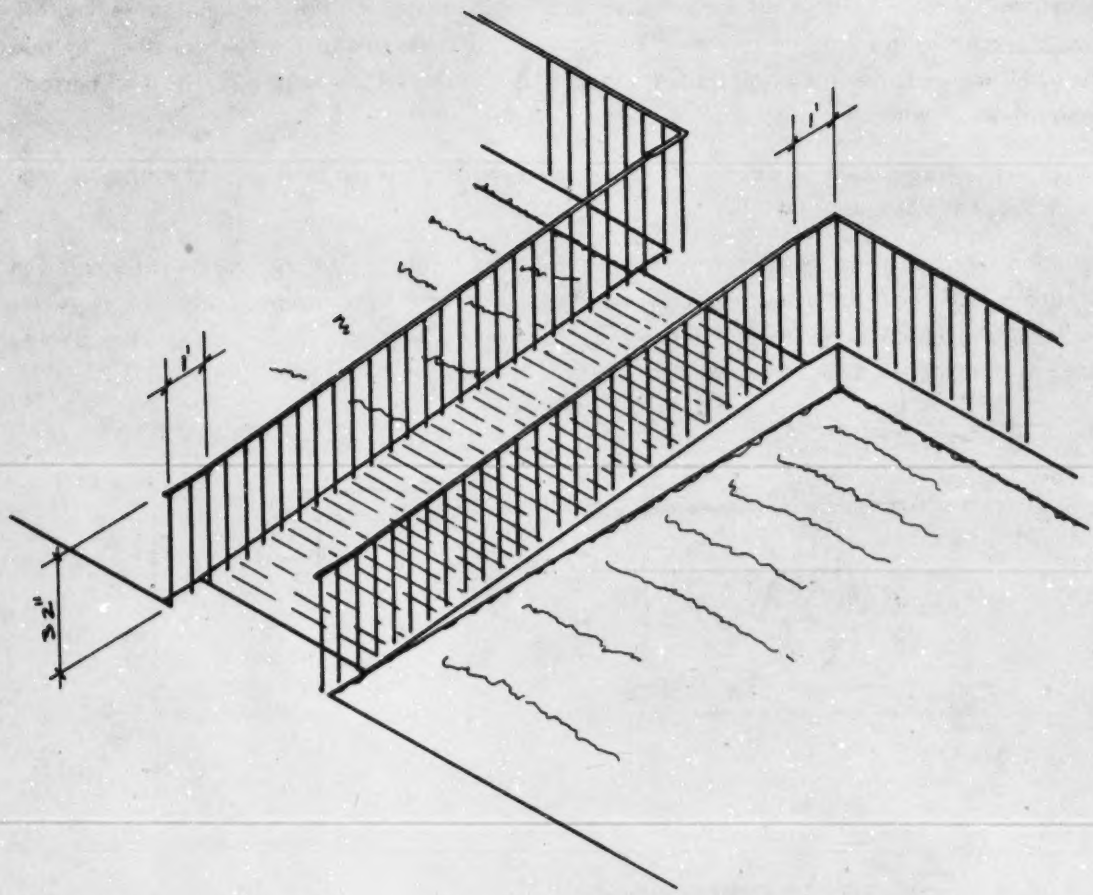


Figure 39. Ramp Handrailings

C215-2.4
(824.2d)
Elevators

a. Where the path of travel includes an elevator, at least one elevator shall conform to the requirements of this section.

b. Elevator cars shall have a clear depth of not less than 46 inches. An unobstructed area at least 4 feet by 5 feet shall be provided in front of the elevator on the entrance story.

Explanation: For those physically handicapped who are compelled to use a wheelchair, an elevator with a depth of 46 inches, while acceptable, does not provide much mobility, particularly if the width of the elevator is minimal. An elevator car not less than 25 sq. ft. with a minimum dimension of 56 inches would give the physically handicapped person freedom of movement within the elevator. (Figure 40)

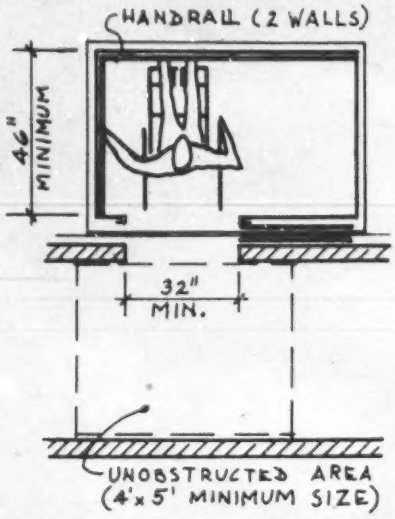
c. Hoistway doors and car doors shall provide a clear opening at least 32 inches in width. (Figure 40)

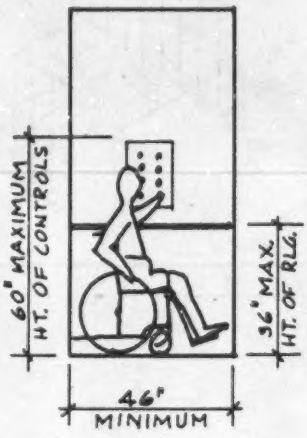
d. In automatic elevators, the emergency controls and controls for stories that are within the path of travel shall be located no higher than 60 inches above the elevator platform. Controls shall have raised letters or other means that are identifiable by persons with visual handicaps.

Explanation: We also recommend the installation of braille plates for floor designation on each floor, located 60 inches above the floor on the fixed point at the open side of the elevator door. A maximum height of 60 inches above the platform will insure that controls will be within reach of all persons, including those in wheelchairs. (Figure 41)

e. Horizontal handrails shall be secured to at least two walls of the car, and located no higher than 36 inches above the car platform.

Explanation: Although no mention is found in the Code of duration of opening on automatic elevator doors, this is a problem for many physically handicapped. An elevator door closing on a physically handicapped individual as he or she enters the car may result in injury. Timers on elevator doors should be adjusted so that the handicapped have adequate time to enter or exit freely. (Figure 41)





Figures 40 & 41. Minimum Elevator Requirements

C215-3
(824.3)
Parking Spaces

a. Where parking facilities are provided, at least two parking spaces or two per cent of the total number of parking spaces, whichever is greater, shall be reserved for the physically handicapped, except that no facilities for the physically handicapped are required where the cumulative parking area is less than 2000 square feet.

Explanation: Two thousand square feet of parking area is perhaps room enough for between 5 and 9 vehicles, depending on the layout of the parking area. The following table shows the minimum number of spaces which must be reserved for the handicapped based on the total number of parking spaces in a given parking lot of over 2000 square feet.

TABLE I.

Total Number of Parking Spaces		Minimum Number of Spaces Reserved for Handicapped
From	To	
Less Than	124	2
125	174	3
175	224	4
225	274	5
275	324	6
325	374	7
375	424	8
425	474	9
475	524	10
525	574	11
575	624	12
625	674	13
675	724	14
725	774	15
775	824	16
825	874	17
875	924	18
925	974	19
975	1024	20

b. Parking spaces shall be at least 10 feet wide, except that a parking space adjoining a walkway shall be at least 9 feet wide.

Explanation: At best, these are minimal acceptable dimensions for parking spaces that would restrict the mobility of some physically handicapped persons. Parking spaces 12 feet wide (11 feet where one adjoins a walkway) are preferred. (Figure 42)

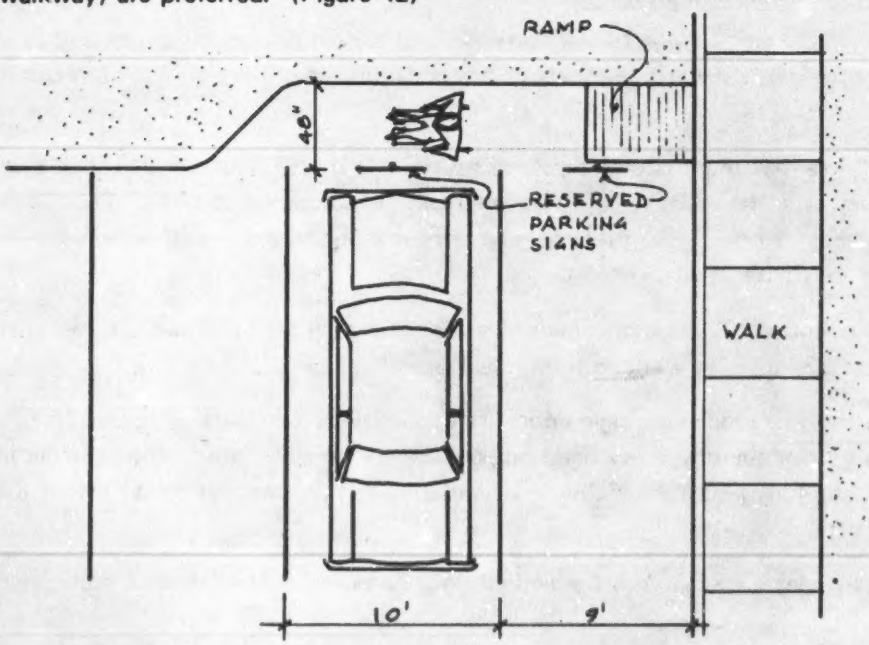


Figure 42. Minimum Parking Space Sizes

c. Parking spaces shall be related to the path of travel so that the physically handicapped need not wheel or walk behind other parked cars, and so that the path of travel within the parking area is a minimum.

Explanation: The ideal location for a parking space reserved for the physically handicapped is adjoining the path of travel and as close to a building as possible; in no case shall this distance exceed 200 feet. Unfortunately, the Code makes no provision as to how these reserved spaces shall be indicated and identified as being set aside for the handicapped. We feel that an above grade sign should be erected at each of these parking spaces clearly indicating that this space has been reserved for those who are physically handicapped. These signs should also incorporate the International Symbol of Accessibility somewhere in their design. (Figure 43)

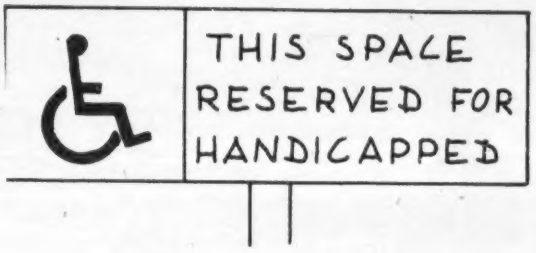


Figure 43. Parking Space Sign

C215-4
(824.4)
Doors Within the Path of Travel and Doors in Spaces Required to be Accessible to the Physically Handicapped

a. Doors shall be of the single-swing or sliding type. Self-closing devices on doors, and power-operated and power-assisted doors under conditions of power failure, shall have a maximum closing tension of 8 pounds.

Explanation: While a maximum closing tension of 8 pounds is acceptable, as a general rule the less tension rating a door closer has, the easier it is for the physically handicapped to open. Time-delay door closing devices are also recommended. The placement of door mats or grates should be avoided as these items often inhibit a wheelchair's movement.

b. Single doors shall provide a clear opening at least 32 inches in width. Double doors shall provide a clear opening at least 32 inches in width with one leaf open.

Explanation: Such dimensions for single doors are applicable to all doors within occupied and public spaces with facilities for the physically handicapped. Where possible, doors should swing in the direction of exit travel. Metal kick plates 7½ inches in height are also preferred for the safety of the individual and the protection of the door.

c. In vestibules, the clearance between the arcs of door swings shall be at least 4 feet.

Explanation: By definition within this Code, a vestibule is "an enclosed space, with doors or opening protectives, to provide protected passage between the exterior and interior of a building, or between spaces within a building." A 4-foot clearance between exterior and interior doors allows the handicapped person sufficient room to maneuver in order to open doors. It is preferred that such exterior and interior doors be part of a straight path of travel; if an interior door is at a 90° angle from the exterior door, maneuvering into position to open an interior door (particularly if it opens out) presents great difficulty. (Figure 44)

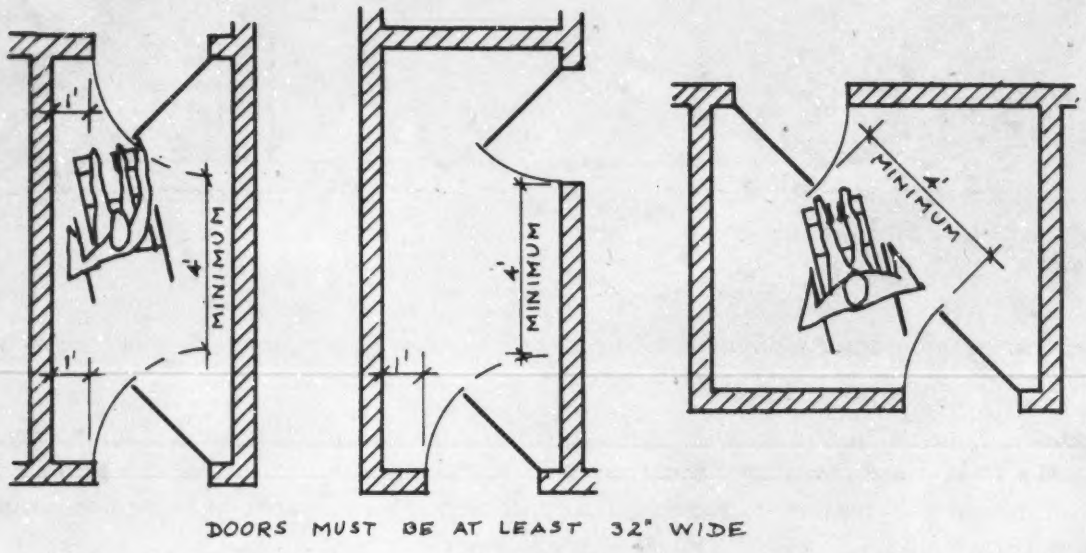


Figure 44. Vestibule Clearances

d. Door handles shall be not more than 42 inches above the floor and shall be of a type having a horizontal lever, a square or knurled knob, or otherwise arranged to permit easy operation.

Explanation: The topmost portion of door handles shall not be higher than 42 inches from the floor. Interpretation of a type of handle which permits "easy operation" is debatable. For preferred options, see Figure 45.

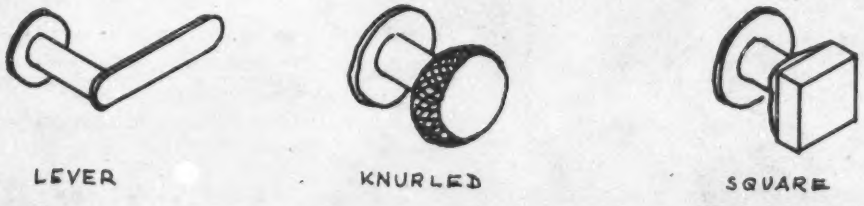


Figure 45. Door Handles

e. Thresholds shall be beveled and shall not exceed three quarters of an inch in height, except that for C6.2 occupancies, thresholds, if any, shall be flush.

Explanation: Institutions for those with limited movement shall have flush thresholds at door openings. Even a beveled ¾" threshold can present an obstacle to a wheelchair individual with sever upper extremity impairment. Flush thresholds are preferred whenever possible. (Figure 46)

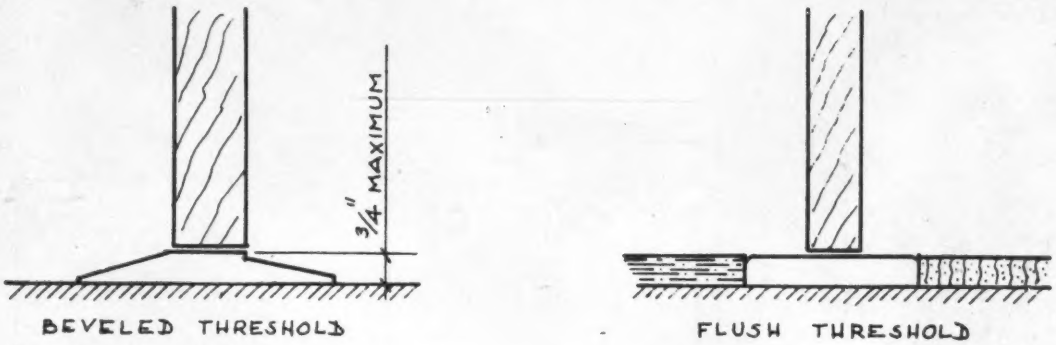


Figure 46. Threshold Height

f. Doors opening into hazardous areas from the path of travel shall be equipped with door handles that are identifiable to visually handicapped persons as opening into hazardous areas.

Explanation: The term "hazardous areas" is not specifically defined within the Code. Our understanding of hazardous areas includes loading platforms, boiler rooms, stairways, fire escapes, etc. A generally accepted means of identifying doors leading to hazardous areas is the utilization of knurled door handles or knobs. (Figure 45)

C215-5 (824.5) Toilet and Bath Facilities

Plumbing fixtures of a type as set forth in Section C215-7 shall be provided as in Table C215-5.

TABLE C 215-5 (II-824). REQUIRED NUMBER OF TOILET AND BATH FACILITIES

Occupancy Group	Plumbing Fixtures
C1, C2, C3.1, C5.1, C5.2 and C5.3	A water closet and a lavatory in at least one public toilet room for each sex.[1]
C5.5	A water closet and a lavatory in at least one public toilet room for pupils on each story or floor level, and a water closet and a lavatory in at least one toilet room for staff.
C6.1 and C6.2 - private facilities	A water closet, a lavatory and a shower stall or bath tub for each sleeping room required as per sections C215-1g and C215-1h.

[1]Public toilet rooms equipped with facilities for the physically handicapped shall be located so that persons need not travel more than two stories thereto.

TABLE C215-5 (II-824) — REQUIRED NUMBER OF TOILET AND BATH FACILITIES
(Continued)

Occupancy Group	Plumbing Fixtures
C6.1 and C6.2 - semi-private or central toilet and bath facilities	A water closet and a lavatory for each multiple of two sleeping rooms, and a shower stall or bath tub for each multiple of six sleeping rooms, or fraction thereof, required as per sections C215-1g and C215-1h.

Explanation: Elsewhere in this Code, it is stated that the path of travel shall extend to toilet and bath facilities for the physically handicapped. Therefore, public toilet rooms with facilities for the handicapped which are located so that persons must travel two stories or less to reach them must be part of the path of travel for the physically handicapped. If, for instance, a public toilet room for the handicapped is located on the second story of a building, it must be accessible by an elevator. Also, plumbing fixtures for C5.5 occupancies should include separate facilities for pupils and staff of each sex. C6.1 occupancies with private facilities require plumbing fixtures in at least two sleeping rooms or 2 per cent of the total rooms, whichever is greater. C6.2 occupancies with private facilities require plumbing fixtures in at least 10 per cent of the total number of sleeping rooms. The table which follows provides the required number of plumbing fixtures in C6.1 and C6.2 occupancies with semi-private or central facilities:

TABLE J.

Required Number of Plumbing Fixtures in C6.1 or C6.2 Occupancies with Semi-Private or Central Facilities

Required Number of Sleeping Rooms C6.1 and C6.2	Required Number of Water Closets and Lavatories	Required Number of Shower Stalls or Bathtubs
2	1	1
3	2	1
4	2	1
5	3	1
6	3	1
7	4	2
8	4	2
9	5	2
10	5	2
11	6	2
12	6	2
13	7	3
14	7	3
15	8	3
16	8	3
17	9	3
18	9	3
19	10	4
20	10	4
21	11	4
22	11	4

TABLE J. (Continued)

Required Number of Plumbing Fixtures in C6.1 or C6.2 Occupancies with Semi-Private or Central Facilities

Required Number of Sleeping Rooms C6.1 and C6.2	Required Number of Water Closets and Lavatories	Required Number of Shower Stalls or Bathtubs
23	12	4
24	12	4
25	13	5
26	13	5
27	14	5
28	14	5
29	15	5
30	15	5

C215-6
(824.6)
Drinking Fountains

Where public drinking fountains are provided and the path of travel extends thereto, at least one drinking fountain shall be of a type as set forth in Section C215-7.

C215-7
(824.7)
Usability of Plumbing Fixtures

a. Adequate clear floor space shall be provided for access to, and safe use of, plumbing fixtures for the physically handicapped. A clear floor space of at least 5 feet by 5 feet shall be available for turning a wheelchair in general toilet rooms, general bathrooms, and general laundry rooms equipped with fixtures for the physically handicapped.

Explanation: The standard "builder's bathroom" of 5 feet by 7 feet is too small. The minimum bathroom size intended for wheelchair use in a sleeping room would have to be 7 feet by 7 feet 6 inches to meet with the 5 feet by 5 feet clear floor space criterion. Toilet room clear area should not be traversed by any part of the room door swing. Also, the 5 foot by 5 foot clear floor space in a public toilet room should be situated to provide ease of access to all facilities, but particularly to water closet stalls for the handicapped. (Figure 47)

b. Faucet and operating levers at plumbing fixtures for the physically handicapped shall be of wristblade or other suitable type not requiring the use of the hand for operation. Self-closing lavatory faucets shall be prohibited.

Explanation: Faucets and operating levers which require twisting or turning motions of the hand are impossible to operate for those persons with upper extremity impairment, such as quadriplegics, and are painful or difficult to use for arthritics. It is preferred that other fixtures in a toilet room for the

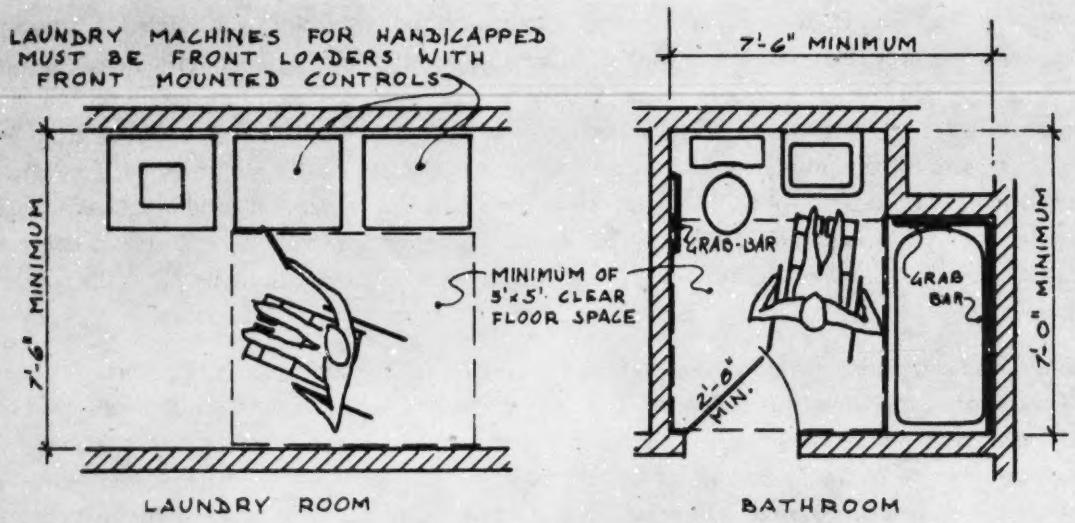


Figure 47. Minimum Floor Space Requirements

physically handicapped, such as the lower edge of mirrors, shelves, towel and sanitary napkin dispensers, disposal units, etc. be mounted at a height of 40 inches from the floor. (Figure 48)

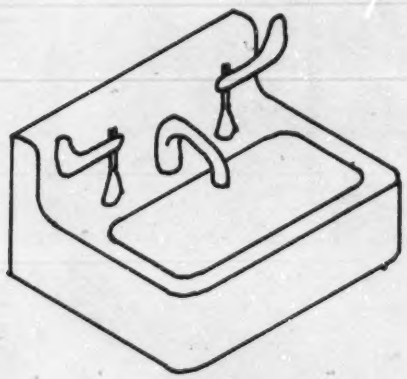


Figure 48. Wristblade Faucet Levers

c. Where water closets for the physically handicapped are installed in general toilet rooms, they shall be located in stalls at least 36 inches wide and 56 inches deep. Stall doors, where provided, shall swing out and shall afford a clear opening at least 32 inches in width. Where stall doors are provided, the stalls shall be at least 66 inches deep. Where water closets for the physically handicapped in group C6.1 occupancy are provided in dwelling units or in general toilet rooms, a horizontal handrail or grab bar of adequate length and 1¼ inches in diameter shall be securely mounted 32 inches above the floor and conveniently located at one side of the water closet with at least 1½ inches of clearance from walls. Where water closets for the physically handicapped in group C6.2 occupancy are provided, they shall be equipped with seats located 19 to 20 inches above the floor, and horizontal handrails of adequate length and at least 1¼ inches in diameter shall be securely mounted approximately 32 inches above the floor, on each side of the water closet, with at least 1½ inches of clearance between handrails and adjacent walls.

Explanation: Stalls equipped with doors are preferred in general toilet rooms to insure privacy for the physically handicapped individual. A stall with door also provides more mobility since the stall itself must be 66 inches deep. It is also preferred to design the stall so that a handicapped individual has enough room on one side of the commode for transfer ease. A stall depth of 72 inches is even more preferable than the dimension required here. For general toilet rooms, it might be advisable to situate the water closet stall for the physically handicapped at the end of the toilet room because of the additional depth required. The design of the water closet itself is critical: the wall-mounted type with a narrow understructure which recedes sharply from the front is preferred for maximum ease of access for the wheelchair-bound. All water closets in dwelling units, sleeping rooms and public toilet rooms of C6.1 occupancy need be equipped with a single grab bar; those for C6.2 occupancies require dual grab bars. Seat height of 19 to 20 inches is also preferred in dwelling units, sleeping rooms and public toilet rooms of C6.1 occupancy. (Figures 49 & 50)

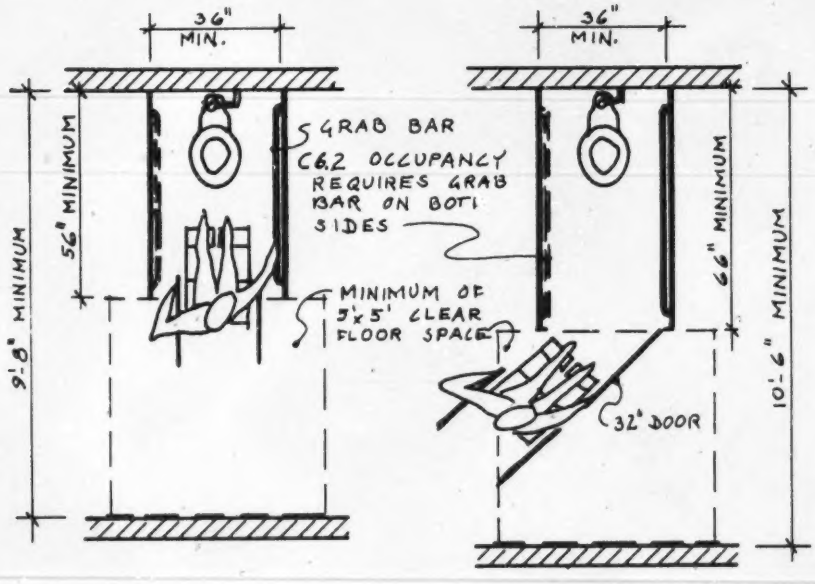


Figure 49. Minimum Toilet Stall Requirements

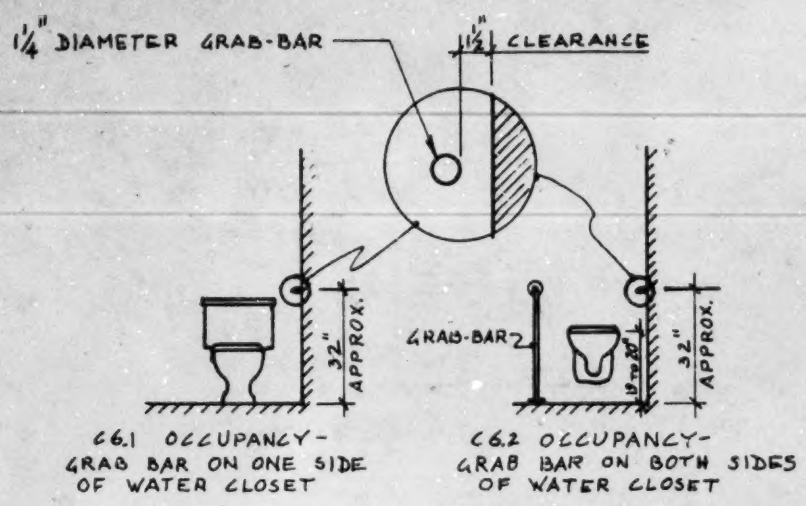

1¼" DIAMETER GRAB-BAR
1½" CLEARANCE
32" APPROX.
GRAB-BAR
32" APPROX.
C6.1 OCCUPANCY - GRAB BAR ON ONE SIDE OF WATER CLOSET
C6.2 OCCUPANCY - GRAB BAR ON BOTH SIDES OF WATER CLOSET

Figure 50. Minimum Toilet Stall Requirements

d. Where provided for the physically handicapped, wall-mounted and pedestal urinals shall be installed so that rim levels are no more than 21 inches above floor level; floor-set stall urinals shall be installed so that rim level is no higher than the toilet room floor level. (Figure 51)

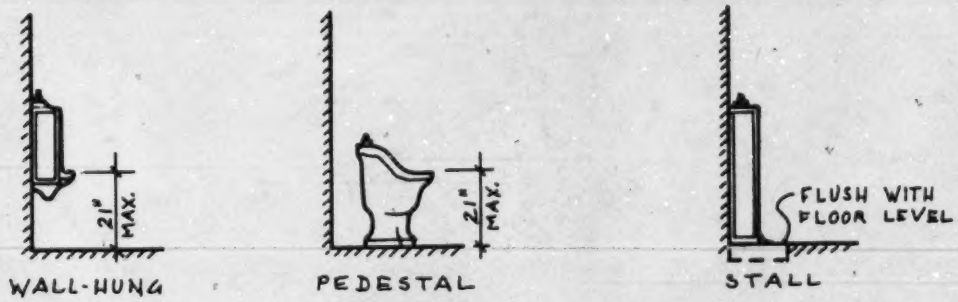


Figure 51. Urinal Rim Height

e. Lavatories and kitchen sinks for the physically handicapped shall have at least 26 inches clearance between fixture bottom and floor for a depth of 10 inches so as to provide sufficient leg room, and the piping beneath the fixture shall be located or insulated so as to prevent injury to persons in wheelchairs.

Explanation: For maximum ease of use, the top of lavatories and kitchen sinks should have a maximum height from the floor of 31 to 33 inches. (Figure 52)

f. Where bathtubs are provided for the physically handicapped, grab bars 1¼ inches in diameter shall be securely mounted on two adjacent walls of the tub or its enclosure, one bar installed horizontally 32 inches above the floor and the second bar installed vertically with its lower end at such height.

Explanation: For safety, it is preferred to mount grab bars on studs, joists, or blocking so that they have a weight-bearing capability of at least 250 pounds. Grab bars should never be secured to glass or metal tub enclosures. (Figure 53)

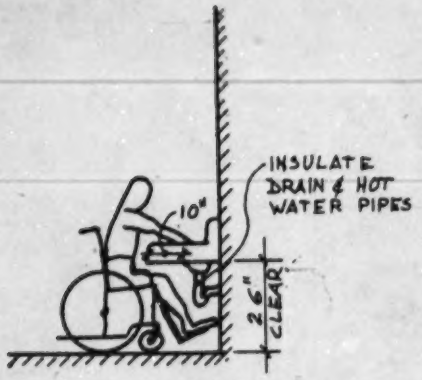


Figure 52. Lavatory and Sink Clearance

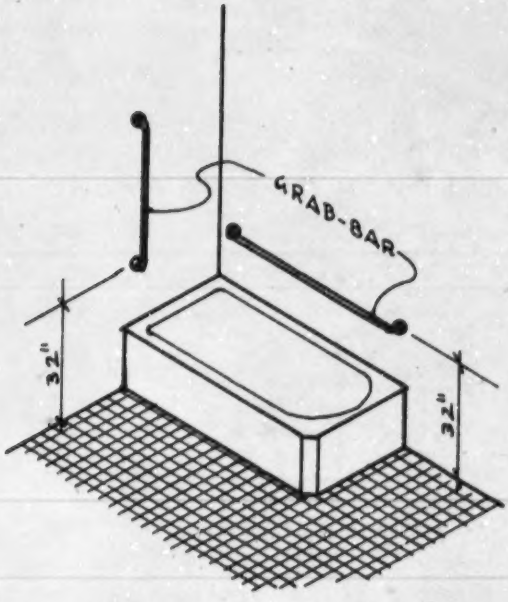


Figure 53. Bathtub Grab Bars

g. Shower stalls for the physically handicapped shall have non-slip type floors, adjusteble type shower heads, and single-lever type mixing valves designed to maintain constant water temperature under variable water pressure and temperature conditions. Mixing valves shall be installed approximately 40 inches above the stall floor and shall be operable from inside and outside the stall by a user at the threshold. Where such shower stalls are provided in dwelling units of group C6.1 occupancy, grab bars 1¼ inches in diameter shall be securely mounted on two adjacent walls of the stall, one bar installed horizontally 32 inches above the floor and the second bar installed vertically with its lower end 32 inches above the floor. Where central bath facilities are provided for group C6.1 occupancy, a shower stall for the physically handicapped shall have at least 9 square feet of floor area, with minimum horizontal dimension of 3 feet, and a curb not exceeding 2 inches in height at the stall entrance. Where central bath facilities are provided for group C6.2 occupancy, a shower stall for the physically handicapped shall have at least 16 square feet of floor

area, with minimum horizontal dimension of 4 feet, and a threshold not exceeding one-half inch in height at the stall entrance. Where such shower stalls are provided in central bath facilities for group C6.1 and C6.2 occupancy, they shall be equipped with a folding seat securely attached to a sidewall of the stall, opposite the mixing valve, and installed so that the top of the seat when in the lowered position shall be 19 to 20 inches above the stall floor. Horizontal handrails 1¼ inches in diameter shall be securely mounted 32 inches above the floor on the rear wall and on the wall opposite the seat. Handrails and grab bars shall provide at least 1½ inches of clearance from walls.

Explanation: The "telephone" type shower head is preferred for most physically handicapped individuals as an adjustable and moveable water source. Where shower stalls are provided in dwelling units and sleeping rooms of C6.1 occupancy, a 9 square foot stall is preferred with minimum horizontal dimension of 3 feet and a threshold not exceeding one-half inch in height at the stall entrance. We also recommend the installation of a folding seat in the shower stall for C6.1 occupancies with private facilities. Also for C6.1 occupancies with private facilities, it is preferred to mount the mandated vertical handrail either on the wall containing the mixing valves or on the wall opposite. (Figure 54)

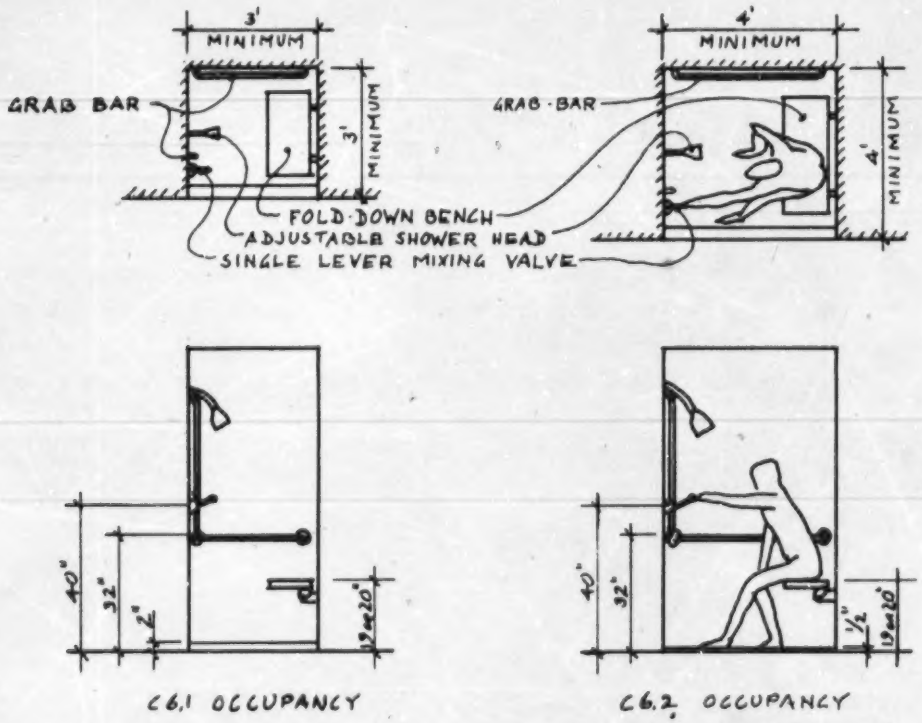


Figure 54. Showers in Central Bath Facilities

h. Drinking fountains for the physically handicapped shall have jets located 31 to 33 inches above the floor and shall have basins projecting 8 inches to 12 inches from the wall or cabinet on which they are mounted. Such drinking fountains shall have up-front jets and controls and shall be designed for hand operation or hand-and-foot operation.

Explanation: The design promulgated here enables the handicapped to reach both the jets and controls and thus to utilize the fountain. Recessed drinking fountains are not permitted. The up-front placement of both jets and controls is critical for the usability of such fountains. (Figure 55)

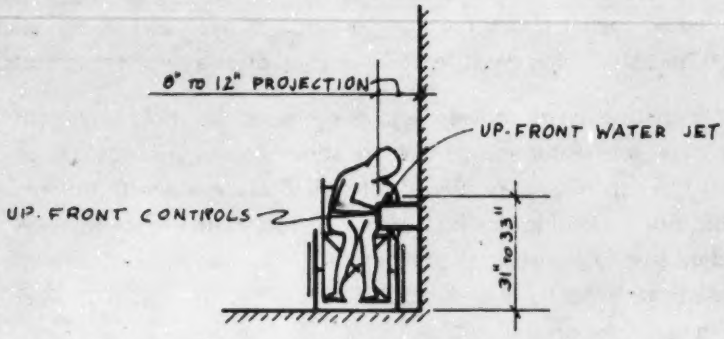


Figure 55. Drinking Fountain for the Handicapped

C215-8
(824.8)
Telephones

Where a telephone for private use is not available within the building, at least one public telephone, suitable for the physically handicapped, shall be provided within the path of travel.

Explanation: Where public telephones are provided in public buildings, at least one such telephone suitable for the physically handicapped shall be provided within the path of travel. If a public building has neither public telephones nor a telephone for private use in case of emergency, one public telephone must be provided which is accessible to the disabled. The problem with most public telephones is that coin slots and dials are situated too high for the wheelchair-bound physically handicapped. Public telephones can be mounted for accessibility if the phone itself is situated so that the maximum height of the coin slot is 4'6" (54 inches) from floor level, and if a clear space under the cabinet of at least 26 inches from floor level is provided for. (Figure 56)

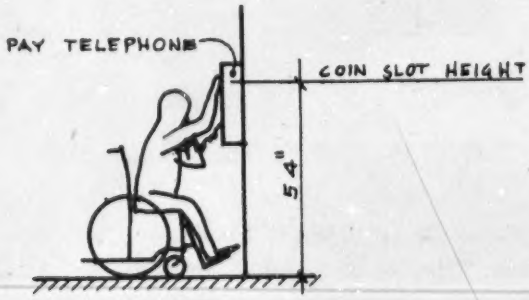


Figure 56. Public Telephone Height